

Railway Age

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Conjuring up the Past

THE leaders of the railroad labor organizations have, as is apparent to every one, been placing the Plumb plan on the shelf—somewhat gradually, it is true, but just about as rapidly as they could and yet save their faces with their own membership after having for a time subordinated all their other activities to it. Every now and then, however, some wizard calls up the ghost of this plan and makes it go through its paces again. This time—and the last time too, if we remember correctly—it is the Locomotive Engineers' Journal. In the current issue of that publication is an article solemnly broaching this patent plan as a solution not only for the railroad "problem" but also for that of the coal industry. The writer claims that it is necessary for the railroads because of the centralization of present control in "Wall street." He advocates it for the coal industry because coal has no such centralized control. Hats off, then, to the Plumb plan, the industrial panacea, the cure for both integration and disintegration in industry! And the industries which the editor of the Journal would forcibly physic with this plan are those in which members of the brotherhood have invested heavily, under the guidance of their own officers.

Passenger Revenues Continue to Decline

ANY hope that passenger revenues, which have slumped so alarmingly during the past few years, may soon take a turn for the better is weakened by the monthly reports of earnings of the Class I roads. The reports for the first seven months of this year which were published last week showed that there were 70 roads which had total passenger revenues in excess of \$1,000,000 for the seven-month period. Of these 70 roads, only 10 had passenger revenues in excess of those for the same period last year, 60 showing decreases. Of the 10 roads which showed an increase in passenger revenues in the seven months of this year, five, or half, owe their favorable position to the fact that they are the beneficiaries of the extraordinarily heavy travel to Florida which they have not had in such steady volume before. A comparison of the passenger revenues for July of this year with those for the same month of 1924 is a little less discouraging. The roads which reported an increase in passenger revenue for the month numbered 22, the remaining 48 showing decreases. It is probable that the reports for August will show increases in passenger revenue compared with August of last year in more instances. If developments confirm this expectation, it will be due to the heavy excursion traffic which a number of the roads have developed. The July reports for the most part show no signs of increases of revenues from this source since excursion operations had only partly got under way in that month. The steady decline in passenger revenues is a problem requiring close attention and more than casual treatment. The operation of excursions is one plan which has met with fair success; others should be devised and

adopted. It seems likely, since much of the passenger business has been lost to the privately owned automobile, a form of competition which can hardly be met, that passenger earnings will not again for at least some years attain the high levels they have reached in the past. This, however, makes it no less imperative that the railways leave nothing undone which may make their local passenger service a less serious burden.

What Is a College Man?

A GROUP of railroad men were discussing the question of the place of the college man on the railroad. They had plenty of time at their disposal and were giving their views a thorough airing, but, unfortunately, it did not seem that there was any chance of their reaching any kind of agreement. Of course, it could not be expected that there should be absolute unanimity on such a subject, but in this case—and it happens frequently—the views were unnecessarily divergent because of the varying ideas held concerning just what a college man is. The debaters were, in fact, arguing on different subjects. Most persons in considering the place of the college man on the railroad have definitely in mind the technical man—the engineer. There is a problem in connection with the securing of men of this training for railroad service; perhaps, indeed, it is with this class of college men which the railroads should be chiefly concerned. But, as a matter of fact, there are other varieties of college trained men and the problem of properly placing them on the railroad is perhaps even more difficult than that of finding the proper niche for the man with an engineering training. These are, first, the men with a purely academic education—say, for instance, in mathematics, English, history, economics, foreign language, and so on, the sort of studies which alone are offered at many of our smaller colleges; second, the graduates from the transportation departments of some of our university business schools. The problem of placing men of these types requires more special arrangements, probably, than placing men with engineering training. The railroads will always have to employ a certain number of engineers and, furthermore, some engineers can come to a railroad without any training other than that which they have received in school and take up some work which no man with practical training alone could perform. This is not so with academic graduates or, generally speaking, with those from schools of commerce. They, particularly the latter, doubtless have a background of education which will help them to master the problems of railroading with greater ease and speed, but only in rare cases are they able without experience to do railroad work which others with experience only could not do. To be sure, the transportation courses offered in some business schools have become so highly technical that men who have taken them come, from the railroad standpoint, practically in the category of engineers. On the other hand, the academic graduate generally comes to the railroad—when he comes

at all—with little definite technical training which will help him. His chief asset is a habit of study and a tendency toward a little broader view of things in general. It will clarify the discussion of this perennial question considerably if those participating will first make clear what they mean when they say college man—engineering, academic or transportation.

Solving the Problem of Handling Perishables

EVERY day in the year the housewives in any city or town of the United States can go to the neighboring grocery store and buy fresh fruits and vegetables of any kind except, perhaps, some of the most perishable. These fruits and vegetables are produced in every part of the country and in almost every part of the year. Most of them are loaded into railroad cars almost immediately after they reach maturity. They must be moved promptly by the railways to market under conditions which will prevent them from spoiling, regardless of whether the temperature in which they are hauled is hot or freezing.

The well known "average citizen" who every day sits down at a dining table loaded with fruits and vegetables from every part of the country has little conception of the problem which providing his table regularly with them presents to the railways and which the railways are daily, weekly and annually solving in a more and more satisfactory way. There is hardly any other kind of freight business which has grown so much within recent years; and probably there is no other kind the volume of which fluctuates so much in different seasons.

In 1920 the number of cars loaded with fruits and vegetables was 663,477; in 1921, 751,699; in 1922, 854,081; in 1923, 878,502, and in 1924, 923,549. The increase in 1924 over 1920 was 40 per cent. It is expected that the loadings in 1925 will be 1,000,000 cars, an increase over 1920 of 50 per cent. To handle this increasing business the railways and car lines controlled by them have been obliged within recent years to add largely to the number of refrigerator cars. They have put in service 22,078 new refrigerator cars in 1923; 14,052 in 1924, and 6,000 thus far in 1925, a total of 42,130. They now have about 140,000 such cars which represent an investment averaging about \$3,000 each, or a total of over \$400,000,000.

As already intimated, the handling of fruit and vegetable traffic presents to the railways an extremely difficult problem both because it is growing so fast and because there are such great seasonal fluctuations in the volume of it. In the first four months of 1924 the average number of cars loaded with fruits and vegetables monthly was 59,403. In September the loadings were 106,728 cars and in October 133,426. Therefore in October the loadings were almost 125 per cent greater than they averaged in the first four months of the year. In the very next month, November, they declined to 75,549, or to 43 per cent less than in October, and in December to 45,517, or to almost two-thirds less than in October.

The railways are now nearing the peak of this year's shipments of fruits and vegetables. Formerly there was little co-operation between the shippers and the carriers to secure the best possible distribution and movement of the available refrigerator cars when the traffic reached its peak. The result was that the grape shippers of California and producers of perishables in other parts of the country found themselves unable to get enough cars

when they most needed them, and, not understanding the acute problem the handling of the peak load presented to the railways, they set up loud outcries against the railways on account of "car shortage." They did this although usually the shortage was largely due to the fact that shippers and consignees were reducing the efficiency with which cars could be used by unnecessarily detaining them for loading, unloading and reconsignment.

Although the volume of this traffic handled in 1924 exceeded all previous records there was almost no complaint or ground for complaint from shippers because of car shortage. This was partly due to the increase in the number of refrigerator cars, but more largely to the fact that the carriers, shippers and consignees had organized to co-operate in handling the traffic. First, there was better organized co-operation than ever before between the carriers themselves. Formerly, if a railway found itself short of refrigerator cars about all it could do was to apply for help by letter or telegram to its immediate connections who perhaps passed the word along. Under the new arrangement it sent its appeal for help to the Car Service Division of the American Railway Association which broadcasted it to all other carriers. Efforts were also made to avoid emergencies by getting advance estimates of actual production in different territories and as far as practicable distributing cars accordingly in advance.

Secondly, in order to avoid undue detentions of cars there were organized terminal perishable committees at 65 of the principal terminals as parts of the various Regional Shippers Advisory Boards. These terminal committees consisted of the receivers of freight and of railroad agents. They obtained daily reports of delayed cars from each railroad agent in their various cities and put every appropriate form of pressure on consignees who were found not to be promptly releasing cars. If they found that a railway was not moving cars promptly after they were unloaded they forcibly brought this to the attention of its officers.

This plan worked so well in 1924 that it is being used again this year, and the number of these terminal perishable committees has been increased to 135, or to one in practically every city of 20,000 population or more. In 1923 36 per cent of all cars were delayed beyond "free time" for unloading, in 1924 33 per cent and thus far in 1925 only 26 per cent. However, the peak of this year's loading is just being approached, and it is too early yet to anticipate how good the record for the entire year will be.

One big problem which confronts the railways and shippers which has hardly yet been tackled, but which in the interest of both greatly needs study is the problem of reducing the seasonal fluctuations in shipments of fruits and vegetables. Because of the fact that the shipments in August, September and October are now so large and in other months relatively so small it is necessary for the railways and their controlled car lines to provide a very large number of extremely expensive refrigerator cars from one-half to two-thirds of which are idle during two-thirds of the year. This means that from \$200,000,000 to \$250,000,000 of the capital the railways have invested in refrigerator cars does nothing to earn a return upon itself during two-thirds of the year. Furthermore, the large volume of these products shipped in the late summer and early fall months results in the markets being repeatedly glutted, with consequent heavy losses to both producers and consumers because of great fluctuations in prices. There are those who have studied the subject who believe that the seasonal fluctuations in shipments can be largely reduced with resulting great benefits to railways, to producers and to consumers.

A Railroad Policy Needed

LIKE Banquo's ghost, the "railroad problem" will not lie down. It is evident that numerous railway bills will be considered by Congress at its next session. The situation forcibly suggests the need for the early formulation in conferences of railway executives of policies which they can and will unitedly support.

There can be no question that various measures will be introduced which, directly or indirectly, will deal with the amount of net return the railways shall be allowed to earn and the way in which it shall be divided among them. The question which is now foremost is that of consolidations. Various kinds of regulation regarding consolidations are being advocated, and one has only to read the projects proposed to see that, regardless of their sources, they are almost all dictated by the desire of those who propose them to promote some selfish territorial or corporate interest. Furthermore, it is plain that a large part of the people are getting a very exaggerated idea of the economies that would result from combining the railways into a few big systems. The growth of this sentiment is dangerous to every railway in the country. Statements made by Louis D. Brandeis and others fifteen years ago to the effect that by the introduction of efficiency methods the railways could save a million dollars a day or more created a sentiment which helped to prevent the railways from getting before the war advances in rates that they needed. If the public generally decides that great savings could be effected by large consolidations this sentiment will become a serious obstacle to securing the rates necessary to enable the roads to earn fair returns.

The Potter plan has been gladly accepted in many quarters because it is believed that, by effecting a more equal distribution among the railways of the net operating income earned, it would make it unnecessary to charge as high rates as would be necessary if the existing rate-making provisions of the Transportation Act were carried out. Therefore, legislation requiring the adoption of some such plan is almost sure to be advocated.

The Godding Bill for the adoption of an arbitrary long and short haul section is almost sure to be re-introduced. It may seem to affect mainly the western transcontinental lines, but it also affects railways throughout the country, and it is the kind of hard-and-fast, restrictive legislation which the railways of the entire country and all who are concerned about their welfare should join in vigorously opposing.

The Howell-Barkley Bill was defeated in the last Congress but there is no reason for believing that the railway labor leaders have become satisfied with the labor provisions of the Transportation Act, and it is highly probable that the Howell-Barkley Bill or some other measure to increase the power of the labor unions on the railways will be introduced at the next session.

Railway executives know much more about the railroad situation than any other group of men. The nation knows that they have made within recent years a most creditable record in raising and investing capital in additions and improvements and in increasing the economy and efficiency of operation. In consequence there has never been a time when a policy or policies of regulation unitedly supported by them would command as much public respect and confidence as now. If, however, railway executives are not prepared when Congress meets to advocate any policy or policies, or publicly disagree regarding those proposed, the public and public men will say, as they often have said in the past, "The railways do not know what they want," and probably the conse-

quence will be the adoption of legislation that no railway executive wants.

The difficulties in the way of getting men who are very busy managing individual railways, and who inevitably regard all questions of policy largely from the standpoint of their own properties, to study and agree upon policies affecting them all are very great. Only, however, when railway executives have done approximately this have harmful regulation been prevented and beneficial regulation secured.

Probably the question regarding which it is most essential that railway executives should formulate a policy is that of consolidations. They do not believe in legislation for compulsory consolidations, and they ought to tell the public why, and not let it be given the impression that they are opposed to it merely because, regardless of the public interest, they do not like to be compelled to do something. What facts, conditions and principles do they believe should be controlling in determining what consolidations should be made? What is the consensus of their opinions as to the economies in capital investment and operating expenses that can be secured by consolidations? What is the consensus of their opinions as to the economic advantages or disadvantages which would result to the railways and the public from the creation of railway systems larger or extending over more territory than the large systems already in existence? Is the theory that consolidations should be effected mainly to unite "weak" and "strong" railways well founded or fallacious?

The public would like to know whether there is a consensus of opinion among railway executives regarding these questions, and if so what it is. The public would like to know what is the attitude of the railways regarding other questions of policy besides that of consolidations. If the railway executives do not formulate and advocate a definite policy regarding the regulation of their business it will, if we may judge by past experience, be subjected to new legislation, anyway, and probably of a kind that will be inimical to the interests of both the railroads and the public.

Results of Immigration Restriction

A DEVELOPMENT of recent months that is not without interest and significance to the railways is the drastic reduction in immigration which has been taking place. Not only has the new immigration law with its two per cent quota limitation, which became effective on June 30, 1924, placed drastic restrictions upon the number of aliens permitted to enter this country, but the number entering from many countries has fallen far short of the quotas and the number of aliens of some nationalities leaving is exceeding the number entering the United States.

The situation can now be analyzed for the first time because of the compilation and publication of statistics of immigration during the first year of the enforcement of the new regulations. According to an analysis of these statistics for the fiscal year 1924-1925 made by the National Industrial Conference Board, the net immigration was only 32 per cent of what it was the year before. The total immigration from quota and other countries amounted to only 294,314 for the year ending June 30, 1925, as compared with 706,896 during the preceding year before the two per cent limitation became effective. Deducting aliens who left the United States during the year, the net immigration was reduced to 201,586 as com-

pared with 630,107 the previous year. Of this net immigration 130,193, or nearly two-thirds, came from Canada and Mexico, non-quota countries. The number of Italians who left the United States was 20,948 greater than the number who entered, while more Greeks, Hungarians, Bulgarians and Lithuanians also departed than entered.

This trend is of direct interest to the railways, for they are among the largest employers of alien labor. They also suffer most acutely from the recurring labor shortages which accompany eras of industrial activity. These shortages cannot be relieved in the future as they have been in the past by the sudden influx of a large number of aliens. Of particular significance to the railways is the curtailment of immigration from those countries on which the roads have drawn most largely for their track and construction labor. The statistics show that of those persons classed as unskilled laborers 15,106 more departed from the United States than entered during the last year as contrasted with a net gain of 70,742 in the year 1923-1924. On the other hand, there was a net gain in skilled labor during the year of 42,422.

At the present time the curtailment of European immigration is being offset in large measure, as far as the railways are concerned, by increased immigration from Mexico. This influx may be short, however, for it is not beyond the realm of possibility that the same influences that worked successfully to curtail immigration from southern Europe may also be brought into play with respect to immigration from Mexico. The only permanent and sure solution of the problem presented is the replacement of manual labor with mechanical equipment as far as possible. Rapid progress is being made in this direction, but much more still remains to be done.

Some Results of Electric Welding

ELECTRIC welding is finding increased application in many operations in railway car and locomotive shops, particularly in shops doing a large amount of welding. One road whose management was not in a position to spend any money in order to save money, regardless of how large such savings might be, was induced by a manufacturer of electric welding equipment to install machines and pay for them out of the savings effected. This was worked out to the satisfaction of both parties, even though in arriving at a suitable basis of determining the monthly savings the highest of several estimates was used to determine the cost of the electric welding. Electric welding on this road has grown during the past year from a deposit of 300 lb. of metal a month to almost 4,000 lb. a month, and it is estimated an annual saving of over \$50,000 is being realized without capital expenditure for new equipment.

Another road, which at the beginning of 1924 had 31 portable electric welding machines in service and purchased 58 additional machines during the year, saves about \$3,000 a year with each machine, or a total of approximately \$270,000 annually. This represents a return estimated conservatively at 200 per cent a year on the expenditure for equipment. This road is now doing all welding of steel on locomotives and cars with electricity at the points where these machines are installed and is at present experimenting with the electric welding of cast-iron.

A further railway application of the electric arc, and one which in the relatively few installations now operating has demonstrated its practicability and economy, is the cutting up of steel cars and scrap with the carbon arc.

This is a relatively new practice still really in the development stage. Some of the problems are being studied jointly by the railroads and the manufacturers, and one plant of 2,000-ampere capacity now under construction at a large reclamation yard is nearing completion. One of the difficult problems is the design of a suitable holder to handle the extremely large currents; another difficulty with the arc in cutting castings of considerable thickness is the disposition of the molten metal; and a further handicap as at present developed is the increased time required as compared to other cutting methods. It must be admitted that these problems are not easy of solution and yet those who are working on them are confident that a satisfactory method of using the carbon arc will be developed and furthermore that the net economies will be large enough to warrant additional installations in railway shops and reclamation yards.

Equipment Market Revives

AFTER several months of surprising dullness, there has at last been a revival of activity in the railway equipment market. There are outstanding at the present time several sizeable inquiries both for locomotives and cars. Notable among these are the pending Chesapeake & Ohio purchases, inquiries in connection with which included 110 locomotives, 125 caboose cars and 15 passenger train cars, having an aggregate value of \$8,000,000. The New York Central, which is nearly always one of the first roads to place orders in any substantial buying movement, has recently issued inquiries for 75 locomotives, and it sent out what the industry called a "feeler" for prices on 1,000 freight cars. The Louisville & Nashville, which, like the Chesapeake & Ohio, must continually add to its equipment to keep up with the demands for non-union coal, and which also is being favored with greater passenger traffic to the increasingly prosperous South, has inquiries out for 30 locomotives, 1,250 freight cars and 38 passenger train cars. Other car inquiries include 1,300 cars for the Illinois Central and 3,000 box cars for the St. Louis-San Francisco. The New Haven has inquiries out for 10 locomotives, 35 multiple unit cars and 5 gas-electric cars. This activity has already been reflected in a considerable amount of orders. The Seaboard Air Line has recently ordered 10 locomotives and the Great Northern has ordered 500 general service cars. The New York Central "feeler" has been followed by orders for 1,000 hopper cars and that company has also ordered 1,000 refrigerator cars. The Baltimore & Ohio has ordered 1,000 car bodies.

The picture with reference to the small number of orders placed thus far this year is given in the following statistics comparing monthly purchases so far this year with purchases in the same months of the two preceding years.

Month	Locomotives			Freight Cars			Passenger Cars		
	1925	1924	1923	1925	1924	1923	1925	1924	1923
January	27	125	358	10,312	6,020	11,025	78	29	559
February	49	85	486	5,388	18,365	10,266	90	293	122
March	106	283	514	4,677	35,846	34,514	111	237	291
April	84	100	150	5,525	11,189	9,744	104	131	179
May	51	107	90	8,944	435	150	22	101	99
June	16	1	141	777	387	1,595	34	31	52
July	39	83	9	843	533	1,022	362	149	66
August	26	8	8	2,816	4,751	1,310	9	164	60
Total 8 months	398	792	1,756	39,282	77,526	69,626	810	1,135	1,428

Why have not equipment purchases so far this year been greater? The principal reason unquestionably has been the remarkable improvement in railway operating efficiency which, in addition to many other things, has effected equally remarkable improvement in equipment

utilization. This has resulted in there being a substantial surplus of locomotives and cars. Thus, the car surplus for most of 1925 to date has ranged between 200,000 and 300,000 cars. At one time—in May—it reached 361,061 cars. The latest report for the period August 22 to 31, following several successive weeks of loadings exceeding a million cars, still shows the substantial surplus of 162,397 cars.

The same is true of locomotives. Thus, according to the Car Service Division reports, the railroads had stored in serviceable condition on January 1, 1925, no less than 4,849 locomotives, or 7.5 per cent of the total number on line. The latest report, which is the one for August 15, shows a surplus of 6,062 which was 9.5 per cent of the total on line. On August 15, in the case of freight locomotives there were shown as stored 3,913 locomotives, or 11.5 per cent of the total number of freight locomotives on line. This was notwithstanding the fact that the week ended August 15 was the fifth in succession in which revenue car loadings had exceeded the million mark.

There might be many reasons why the railroads need not buy equipment while they had so many serviceable cars and locomotives idle. However, there are at least two reasons why that thesis does not hold water in all cases. Thus, while some roads are reporting that they have a sizeable proportion of their locomotives stored in serviceable condition, some are reporting only a few stored, and some—in most cases those favored with good traffic—none. Those who have none, or those who have only a few, have stayed out of the equipment market quite as completely as those who have many stored.

Most important of all, however, is the question as to what kind of equipment it is that is being reported as "Stored, serviceable." Is it the modern efficient motive power, for instance, or is it the old power that has been displaced and is merely being kept on as a reserve or because of a certain hesitancy to write it off the books for fear of causing charges to operating expenses in the retirements accounts? Of course, the question will be answered differently on different roads. Many observers are inclined to believe that the figures alone do not tell the whole story and that the fact that the railroads have 11.5 per cent of their freight locomotives stored in serviceable condition means less than it seems to. They believe that this surplus consists mainly of engines that could not hold their own in service under the new requirements of efficiency that the railroads—and the locomotive builders with their increasingly efficient designs—have set up for themselves during the past two or three years.

Where Accuracy Should Be the Aim

IT is the practice of many manufacturers to publish facts and data pertaining to their products in handbook form. Although the majority of such publications are ordinarily classified as catalogs, still the information contained in them has been so well selected and arranged that they have become an essential part of the railway engineering and mechanical department officer's working library. Practically every railway mechanical engineering office has at least a copy of Baldwin's Locomotive Data, the American Locomotive Company's handbook, the Carnegie Pocket Companion or Superheat Engineering Data. There are a number of other publications of a similar nature that should be added to this list, but those mentioned will serve to illus-

trate the fact that the publication of such handbooks results in the acquiring of a prestige which all manufacturers must live up to. This fact is well appreciated by the manufacturers who make it a matter of practice to publish such handbooks and carefully revise them from year to year. Because so many manufacturers make it a policy to give out only information which is known to be accurate, many railway officers are becoming more accustomed to rely upon the data and information assembled by the manufacturer as being authentic.

The principal function of a railroad is to sell transportation and comparatively little equipment for testing new devices or processes incidental to the business of selling transportation is provided. Therefore when a manufacturer circulates a pamphlet or other sales literature containing data which has not been properly checked and verified, and the statements contained therein are found to be in error, one does not have to use a great deal of imagination to guess what the final effect will be. For example, a case was recently brought to our attention by a mechanical department officer concerning a letter which contained a number of statements and a table comparing the cost of two methods of performing a number of jobs common in railroad shop work. The cost figures shown, however, were so out of proportion with the cost usually incurred in such work that this officer wrote to the manufacturer requesting further details as to what work was done on a number of the parts listed in the table. This inquiry led to an investigation and check by the manufacturer. It was found that one column of the table, listing the number of parts, was entirely wrong and that this effected the accuracy of all the other figures. However, the interesting feature of the method used by the manufacturer in collecting the data for this statement, was that this work had been performed by a clerk and was not carefully checked before being sent out. How much better it would have been if the data had been assembled and checked by some one who understood the technical facts before it was sent out.

Both Road and Plant Tests of Locomotives Needed

THOSE who have read the article describing the Boston & Albany tests of the new 2-8-4 type locomotive built by Lima, written by F. A. Butler, superintendent of motive power and rolling stock of that road, in last week's issue of the *Railway Age*, will, no doubt, have been impressed with the significance of these tests in at least one particular aside from the excellent coal, water and capacity performance of the locomotive; that is, the translation of these tests results into terms which mean something to the operating officer, who is particularly interested in the capacity of a locomotive to average more ton-miles per hour over a division as well as to handle increased tons per train, and who is also interested in knowing the relative fuel economy with which the result is obtained. It clearly shows the meaning of horsepower, the importance of which as applied to the transportation of freight is becoming increasingly evident with the growing need for better utilization both of motive power and roadway facilities. Such tests should by all means be run on every railroad whenever a new class of freight locomotive is placed in service. The use of a dynamometer car is desirable, but the essential practical value of the test can be obtained even where a dynamometer car is not available with which to determine accurately the average drawbar pull and dynamometer

horsepower output of the locomotive. The ton-miles per hour capacity of the locomotive and its coal performance over the particular division on which the tests are run can still be obtained, and this is essentially what the operating officer wants to know.

When a new type of locomotive, such as the Lima 2-8-4, is developed, in which a marked departure from customary proportions is made, there is a real need for the exact measurement of details of its performance that can not be made in dynamometer road tests. Such data are not of primary importance from the standpoint of the individual railroad nor are they needed to determine the over-all performance of the locomotive. They are, however, of tremendous importance from an engineering standpoint in the interest of sound future development to determine accurately just what part each special feature or special relationship in the new design has had in the over-all result. It will be valuable, for instance, to know definitely whether the large grate area is entirely responsible for the splendid boiler performance of the 2-8-4 locomotive or to what extent other factors in the boiler design, such as the tube spacing incidental to the Type E superheater, influenced the final result. Even more broadly, it will be of value to know to what extent the proportions of the boiler and the limited cut-off have shared in determining the over-all thermal efficiency of the locomotive. There is also the question of the mechanical efficiency of a locomotive involving, for instance, a new type of rod drive, which can only be compared with the known efficiencies of other types determined by test plant operation.

While the road tests much better meet the requirements of the operating officer than the results of test plant operation, the full value of such tests is necessarily local in its scope and must be supplemented by the test plant to bring out fully the advantages of such innovations of design as are involved in the new Lima 2-8-4 type, so that they may be clearly evaluated in relation to the customary standards.

New Books

Superheat Engineering Data: A handbook on the generation and use of superheated steam. Sixth edition, revised. Bound in keratol, 4½ in. by 7 in., 208 pages, 85 illustrations and diagrams, 69 tables. Published by the Superheater Company, New York. Price \$1.00.

This handbook contains condensed data for steam power plant engineers and operators. A feature of the book is the index consisting of 16 pages, which assures ready reference. Superheated steam, its advantages over saturated steam and the proper design and performance of superheaters, are briefly discussed. Superheater arrangements are illustrated in practically all stationary, marine and locomotive type boilers commonly made in America. Waste heat, portable and separately fired superheaters are also shown. Brief comparative data is given as to sizes, tube sizes, arrangement of tubes, etc., for the stationary water tube boilers which are illustrated. The steam tables cover pressures from below atmospheric to 600 lb.; absolute, and include properties of superheated steam from 50 deg. to 300 deg. F. superheat.

The section on piping includes information for figuring piping for handling water, saturated and superheated steam and velocity and pressure drop of water and steam flowing through piping. In this section is included the standard weights and pipe flanges for high pressures proposed by the American Engineering Standards Committee. This book also contains engineering data on coal and oil-fired boilers, which include tables of heat values

for gaseous, liquid and solid fuels. Other miscellaneous data include complete conversion tables and data on bolts and screw threads, with the recent work of the American Engineering Standards Committee and the National Screw Thread Commission. There are also many miscellaneous tables frequently used by steam engineers.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

The Boston and Maine Railroad, by T. F. Joyce. A history, 1830-1925. Pamphlet form of article listed in August 22 booklist. 23 p. illus. Published by Boston & Maine Railroad, Boston, Mass.

Comparative Statement of Operating Averages—Class I Steam Railways in the United States, Years 1924, 1923, 1922 and 1921, compiled by Bureau of Statistics, U. S. Interstate Commerce Commission. Statement no. 25200 (3d in series). 115 p. Published by Government Printing Office, Washington, D. C.

Federated Malay States Railways Report for the Year 1924, by Lt.-Col. J. P. Swettenham. Includes illustrated descriptions of the Guillemard Bridge and the opening of the Johore Causeway. 40 p. illus. maps. Published by Federated Malay States Government Printing Office, Kuala, Lumpur, F.M.S.

Official Year-Book of the Union of South Africa, no. 7-1924. Chapter 22, "Railways and Land Transportation," gives detailed history of transport development in the Union and other parts of South Africa. Published by Government Printing and Stationery Office, Pretoria, S. A. 5 shillings.

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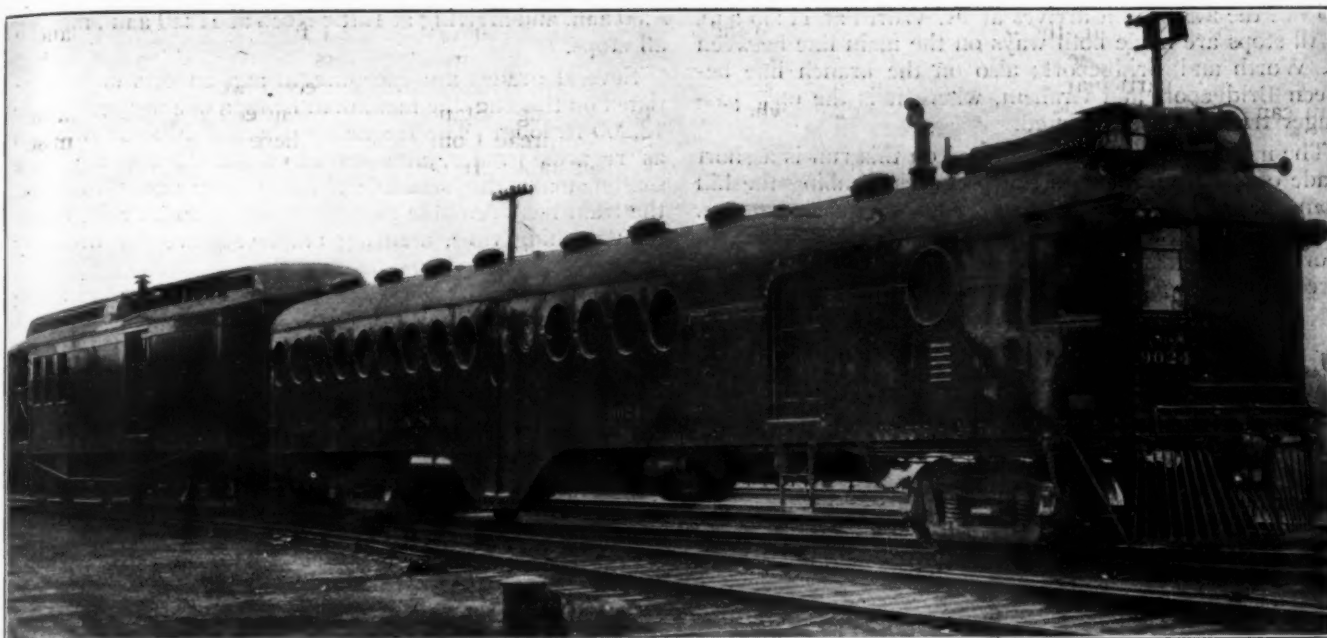
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View Showing Shortened Front End to Accommodate New Power Plant—The Car Hauls a Trailer in Regular Service

Rock Island Converts McKee Cars to Gas Electric Drive

Three are equipped with electro-motive power units at Horton shop—Conversion cost \$70,000

By E. Wanamaker

Electrical Engineer, Chicago, Rock Island & Pacific, Chicago

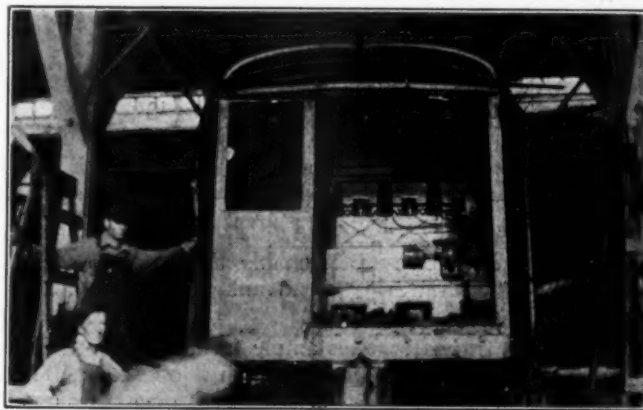
WITH a background of 12 years' experience with two General Electric gas-electric cars, and a realization of the value of motorized equipment for light rail traffic, the Chicago, Rock Island & Pacific decided a few months ago to take another forward step in motorization by converting three old McKee gasoline motor rail cars to the modern gas-electric type. These cars, converted at a cost of approximately \$70,000, may now be operated as single units, or utilized in hauling some of the old, light-weight standard cars as trailers, thus making them available for light service on either branch or main lines. As a matter of fact, they have been placed on runs requiring the hauling of trailers.

Two of the converted cars, which weigh 40 tons and are 65 ft. long (originally 70 ft.), haul 28 ton, 50 ft., non-platform baggage car trailers. Their interiors are so rearranged as to furnish accommodations for 84 passengers each, with all facilities for and complete separation of white and colored passengers. The third converted car is similar to the first two, except that it has no special provision for colored passengers and is operated with a 32-ton 53-ft., non-platform combination mail and baggage car trailer.

Converted Cars Give Satisfactory Service

Of the first two trains mentioned, the first is giving satisfactory service between Ft. Worth and Graham, Tex., making a round trip, including terminal mileage, of 194

miles daily, seven days a week. Of this distance 41 miles is between Ft. Worth and Bridgeport on the main line north from Ft. Worth, and 55 miles over a branch line from Bridgeport west to Graham. The train leaves the



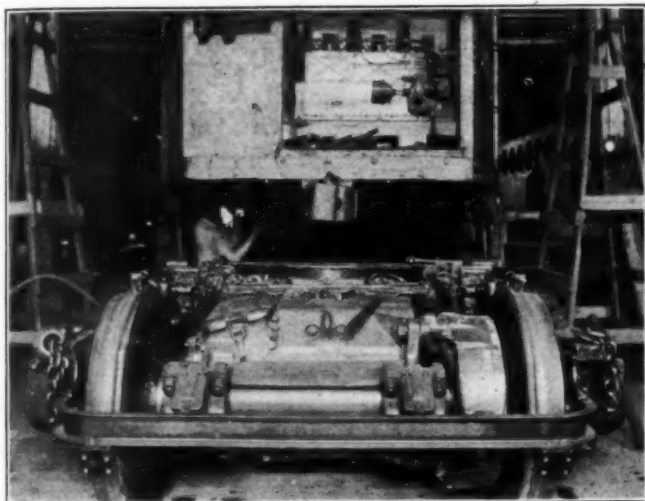
Front End Interior View Showing 175-Hp., Six-Cylinder, Heavy Duty Driving Motor—Direct Connected Generator at the Left (Not Visible)

Texas & Pacific station in Ft. Worth at 5:00 p.m., arriving at Graham at 9:30 p.m., where it is left on the siding for the night. Leaving Graham the following morning at

allows sufficient reserve for adverse conditions which are encountered from time to time.

Ability of Train to Drift Important

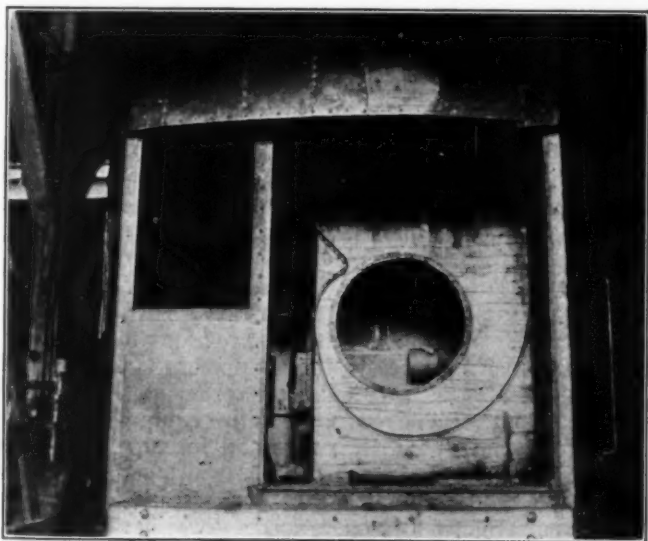
On all of these runs the ability of the train to drift long distances is of much advantage and the enginemen are rapidly learning to take advantage of this ability, resulting in substantial savings in fuel, and smoother operation of



Close-Up View of Front Truck, Equipped with Two Electric Driving Motors, Before Application to Car Body

the train, with promised reduction in engine maintenance.

The total equipment weight of each of the first two trains is 68 tons; the total equipment weight of the third train is 72 tons. The third train carries a railroad post-office compartment in the trailer car. The other two trains handle only pouch mail. All three of the two-car trains stop, start and accelerate easily on the heaviest grades.

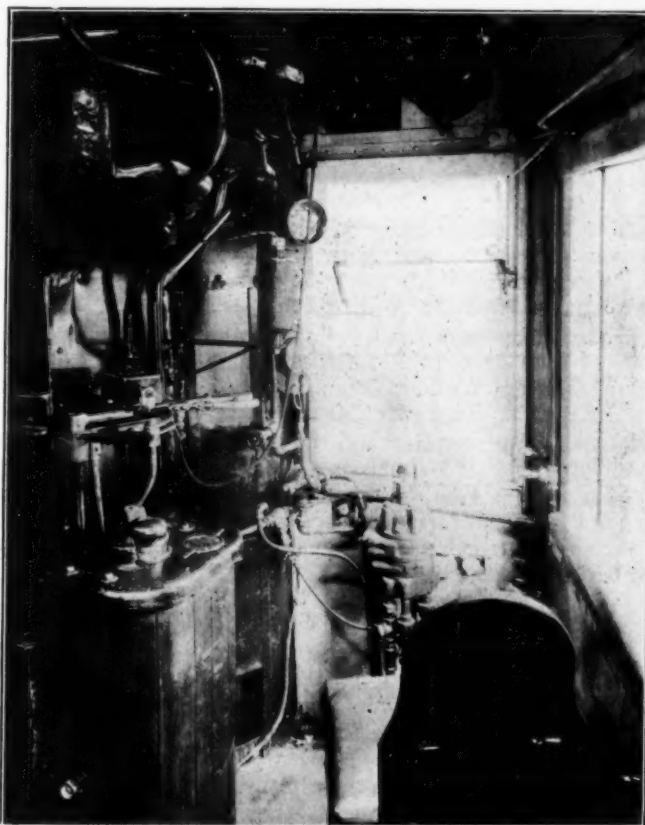


After Application of the Motor the Next Job Was to Install the Radiator and Fan Arrangement

The trailer cars, as well as the motor cars, are heated by railway standard double coil Baker hot water heating systems. Also, the trailer cars are well lighted with 32-volt electric current obtained from the motor car 32-volt lighting system by means of Oliver plugs and receptacles. This form of lighting is of special advantage to the railway postal clerk working in the mail compartment of the combination mail and baggage car.

Conversion Work Started Last April

The actual work of converting the three cars started the latter part of April, 1925, at the Horton, Kan., shops of the Rock Island. Five feet was cut off the pointed front end of each car and the engine room stripped. The trucks and body bolster were removed and a new bolster of plates and structural shapes built in to form a suitable foundation for the engine and generator. Prior to this time, however, measurements and sketches were made of proposed changes in the body, and the necessary drawings for the bolster were on hand. A large percentage of the power equipment, supplied by the Electro-Motive Company, Cleveland, Ohio, was received about May 1 and a few days later a member of this company's engineering staff was on hand to assist in installing the equipment. Several sketches were made of the power plant and brake



Driver's Seat and Control Apparatus—The Throttle, Electric Controller, Brake Valve and Operating Gages Are Shown

system layouts, and small drawings of tanks, brackets, cleats, etc., were made, while a small shop force proceeded with the work.

The work was confined largely to one car for the first three weeks, and then the men were shifted to the other two cars, a second force being started on the work on the first car. By June 10 the first car was finished, tested and started to Des Moines, Iowa, under its own power, going into service there June 15. This car pulled a 32-ton combination mail and baggage trailer from Horton to Des Moines, and from Purdy to Des Moines, a distance of 41 miles, making a schedule speed of 48 miles an hour, including three stops. The other two cars were completed and tested, leaving Horton as a two-car train June 24.

No trouble was encountered in rebuilding these cars. The connection of the bolster with side and center sills was very simple and easily constructed. By cutting off the sharp front end, sufficient room was made for installing the Electro-Motive radiator and fan arrangement, at

parts that may be needed, so they will be on hand when the car is received at the shop, thus expediting the return of the car to revenue service with the least possible delay. General running repairs, bearing adjustments, etc., will be made whenever found desirable.

A complete stock of repair parts is carried and maintained in the Horton store for the system. The relative simplicity of the equipment is indicated by the fact that this stock contains only 77 items for the electrical equipment and air compressor and 29 items for the Model 106 Winton gasoline engine.

The following list of repair parts is carried and maintained locally: one pair of power truck wheels and axle complete with gear; one pair of trailer truck wheels and axle, journals and pedestal jaws; as well as a few parts for the car body and brake system.

The following list of spare parts is carried and maintained in a spare parts box on each car at all times:

FOR ELECTRICAL EQUIPMENT

- 2 Generator brushes
- 2 Exciter brushes
- 2 Fan motor brushes
- 4 Railway motor brushes
- 1 Air compressor motor brush
- 1 Air compressor intake valve
- 1 Air compressor exhaust valve

FOR STARTING MOTORS

- 1 Brush
- 1 Brush spring
- 1 Bendix spring

FOR ENGINE EQUIPMENT

- 1 Intake valve
- 1 Exhaust valve
- 1 Intake valve spring (small)
- 1 Intake valve spring (large)
- 1 Exhaust valve spring (small)
- 1 Exhaust valve spring (large)
- 2 Valve spring seats
- 1 Connecting rod bearing, upper and lower half complete.
- 1 Air starting valve
- 1 Air starting valve spring
- 1 Set pump packing

It is believed that the problem of operating and maintaining motor cars will become easier as more of them are placed in service and more Rock Island employees become familiar with them.

Railway Questions in Canadian Campaign

PREMIER MACKENZIE KING, of Canada, the leader of the Liberal party, in announcing the dissolution of the fourteenth Parliament and the calling for a federal election to be held on October 29, made some statements in regard to the policy of his government on the railway problem. After announcing that the contract with Sir Henry Thornton as president of the Canadian National had been renewed for another five years at \$65,000 a year, an increase of \$15,000 a year over his previous agreement, the Prime Minister gave at length what his government, if re-elected, will do in regard to the railway problem and the relations between the Canadian National and the Canadian Pacific. He scorned the idea of an amalgamation of the two roads, but declared it would be his policy to compel the two roads to closely co-operate for the purpose of eliminating costly duplication of services.

On the railway question generally he said in part:

It is one of the fundamental principles of the Liberal party to ensure that the control and management of the National Railways is divorced completely from political influence and control.

There seem to be two possible solutions of the railway problem in Canada: (1) The amalgamation of the Canadian Pacific and Canadian National Railways under some equitable scheme which would reasonably protect the proprietors of both systems; (2) the continuance of the two systems as separate entities, but with the introduction, either voluntarily or compulsorily, of a sufficient

degree of control over both systems to eliminate waste. Of those who advocate amalgamation, the believers in private ownership of railways would absorb the Canadian National Railways in the Canadian Pacific Railway; the believers in government ownership of railways would absorb the Canadian Pacific Railway in the Canadian National Railways. Each designates the process of absorption by the word "amalgamation." In either case the result would be the creation of a monopoly, and that, I venture to say the most powerful monopoly in the world. It would mean a complete monopoly of the railway transportation industry in Canada, and the centralization of enormous power in the hands of a few individuals. For my own part, I am unalterably opposed to monopolies of any kind, and, above all others, to railway and banking monopolies, whether they be government or private owned.

The task is one with which Parliament alone can deal; is one which it is perilous to delay, and that it is a task which cannot be successfully carried out at a session immediately preceding a general election, or by any government which has not a substantial majority to assist it in making its policies prevail.

I have always contended, as you know, that government ownership of railways should be given a fair trial. That has been the policy of the present administration with respect to the vast railway system, which we found in a disorganized and decentralized condition when we took office in December, 1921.

Though privately owned, the Canadian Pacific Railway, to my mind, is as much a Canadian undertaking as the government-owned system. It is an institution of which every Canadian has reason to be proud. Nothing like it, with its vast railway equipment and its fleets of ships, exists elsewhere. It is a Canadian enterprise which encircles the globe. An injury to the credit of that great system would, I believe, soon prove an injury to our national credit. The present administration has held that, while government ownership should be given a fair trial, the Canadian Pacific Railway Company should be given fair play.

We all know that in both freight and passenger services there are unnecessary duplications of railway tracks and rolling stock, in the running of trains, and excessive competition in speed and in other particulars. We have established a system of railway rate control. Why should we not establish some system of railway service control? Why should not a considerable saving be effected by running rights being granted by each railway to the other, over its lines where traffic is light or special reasons for such a course exist, the whole to be worked out on some fair reciprocal basis? Why should one union depot not serve the purpose of two, or one line of railway be substituted for parallel lines in many a locality?

The Conservative Attitude

In his first big speech of the campaign Arthur Meighen, leader of the Conservatives, had, among other things, this to say about the railway problem:

Mr. King tries to mislead the people by leaving out of account a large portion of the debt of this country, which, under his regime, has grown by leaps and bounds, I mean the debt of our National Railway System. This debt the people of Canada owe just the same as any other debt. Mr. King has abandoned the course pursued by the late government of supplying the great bulk of the money for the National Railways out of the treasury, and instead has simply backed the notes of the railway company. Now he advances very little in cash, and endorses the railway companies' notes for the balance, and he seems to think the people of Canada don't understand that the notes of the railway company are our notes, and that we must see them paid because the railway company is ours.

Mr. King does not like amalgamation; neither do I, but the fact is by supplying money by the way he has supplied it, or, rather, by authorizing and endorsing these vast sums for the system for new capital investments and all the rest of it, he deliberately rushed the whole system into a bog, from which the rescue will be difficult indeed. That this government is absolutely powerless to rescue it is evident to the whole of Canada. The problem is too big for it, and I don't hesitate to say that if this government is returned the process of the last two years will go on, and the gulf will soon be reached.

You ask what I would do. I will tell you. I will stop these new capital investments with a strong hand the first month I am in power. There will be no more Scribe hotels; there will be no more skyscrapers on Yonge street; there will be no more extravagant golf courses and radio systems here, there and everywhere; there will be a determined effort to get the last dollar out of the property we have, and not keep adding blindly to our obligations and our troubles. I would hope that these methods vigorously applied, and accompanied by a stimulation of industry and production would bring some light and some sunshine, some hope of recovery from the swamp of debt in which we are all but mired now; but at all costs we have to get out and get on a sound basis again.

Statistics Show Increase In Use of Treated Ties

STATISTICS recently compiled by R. K. Helphinstine, Jr., for the Forest Service of the United States Department of Agriculture and the American Wood Preservers' Association, show that 1924 was by far the record year in the preservative treatment of wood. Not only was the volume of wood treated and the consumption of preservatives greater than in any previous year, but more ties, piles, poles, construction timbers and miscellaneous lumber were treated than ever before. Only in the case of wood blocks was there a decrease, as compared with 1923.

A total of 62,632,710 cross ties were subjected to preservative processes in 1924, this being by far the largest number of ties ever treated in any one year. It exceeds the total for 1923 by 9,022,535 and is 7,249,195 more than the previous high record of 55,383,515 ties for 1921. During 1924, 263,583,235 cu. ft. of timber of all classes was subjected to treatment, as compared with 224,375,468 cu. ft. in 1923, the previous high record. The consumption of creosote in 1924 amounted to 157,305,358 gal., as compared with 127,417,305 gal. in 1923, and 108,373,359 in 1913, the two previous maximums. Zinc chloride was also used in greater volume during 1924 than in 1923, the figures for these two years being 33,208,675 lb. and 28,830,817 lb., respectively, but these totals fall considerably short of the consumption of 51,375,360 lb. in 1921. Petroleum, which is used in increasing quantities in mixtures with creosote, is shown for the first time under a separate classification, the total for 1924 being 11,179,346 gal. Paving oil totaled 1,214,452 gal. and miscellaneous preservatives, 473,207 gal.

During 1924, 162 treating plants were in operation and 5 were idle. Ten new plants were constructed during the year and 5 were abandoned. Of the plants in operation, 30 are owned and operated by railroads.

The number of ties treated with zinc chloride in 1924 was slightly less than in 1923, the increase in the total number of ties treated being almost entirely in ties treated with straight creosote or mixtures of creosote with other materials. In 1924, 34,593,986 were impregnated with creosote, 7,430,840 with a mixture of creosote and petroleum, 5,238,961 with the zinc chloride, creosote emulsion, 15,344,447 with zinc chloride and 24,476 with miscellaneous preservatives.

Wood Preservation, 1909-1924, Together With Consumption of Creosote and Zinc Chloride

Year	Total Material Treated Cu. Ft.	Number of Cross Ties Treated	Creosote Used, Gal.	Zinc Chloride Used, Lbs.
1909	75,946,419	20,693,012	51,426,212	16,215,107
1910	100,074,144	26,155,677	63,266,271	16,802,532
1911	111,524,563	28,394,140	73,027,335	16,359,797
1912	125,931,056	32,394,336	83,666,490	20,751,711
1913	153,613,888	40,260,416	108,378,359	26,466,803
1914	159,582,639	43,846,987	79,334,606	27,212,259
1915	140,858,963	37,085,585	80,859,442	33,269,604
1916	150,522,982	37,469,368	90,404,749	26,746,577
1917	137,338,586	33,459,470	75,541,737	26,444,689
1918	122,612,890	30,609,209	52,776,386	31,101,111
1919	146,060,994	37,567,927	65,556,247	43,483,134
1920	173,309,505	44,987,532	68,757,508	49,717,929
1921	201,643,228	55,383,515	76,513,279	51,375,360
1922	166,620,347	41,316,474	86,321,389	29,868,639
1923	224,375,468	53,610,175	127,417,305	28,830,817
1924	268,583,235	62,632,710	157,305,358	33,208,675

Cubic Feet of Timber of Various Classes Treated in 1923-1924

Classes	1923	1924
Crossties	160,830,525	187,894,130
Piles	9,569,443	11,685,757
Poles	26,886,904	36,716,768
Wood blocks	4,932,307	4,191,560
Cross arms	420,206	517,811
Construction timber	18,837,795	24,292,231
Miscellaneous lumber	2,898,288	3,281,978
Total material treated	224,375,468	268,583,235

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended September 5 amounted to 1,102,946 cars, a decrease of 21,940 cars as compared with the preceding week, when a new record was established, due to the falling off in coal loading following the suspension of work in the anthracite mines. This was an increase of 181,643 cars as compared with the corresponding week of last year and an increase of 170,030 cars as compared with 1923 but in the two earlier years the week for which the comparative figures are given included the Labor Day holiday. All districts and all classes of commodities except grain and grain products and livestock showed increases as compared with last year. Merchandise and miscellaneous freight showed particularly large increases and also considerable increases as compared with the preceding week. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING, WEEK ENDED SEPTEMBER 5, 1925

Districts	1925	1924	1923
Eastern	247,585	202,814	198,562
Allegheny	214,829	180,327	197,077
Pocahontas	57,533	43,345	40,452
Southern	158,762	131,716	125,802
Northwestern	176,604	143,215	159,725
Central Western	170,509	153,736	144,644
Southwestern	77,124	66,150	62,654
Total Western	424,237	363,101	367,023
Commodities			
Grain and Grain Products	55,731	64,996	46,764
Livestock	32,212	32,706	35,136
Coal	178,218	149,945	153,022
Coke	11,305	7,268	13,540
Forest Products	71,659	62,875	66,266
Ore	59,769	45,949	71,699
Mdse., l. c. l.	268,992	218,689	217,673
Miscellaneous	425,060	338,875	324,816
Total	1,102,946	921,303	928,916
August 29	1,124,436	1,020,809	1,092,150
August 22	1,180,107	982,760	1,069,915
August 15	1,064,793	953,408	1,039,938
August 8	1,051,611	941,407	973,750
Cumulative Total, 36 Weeks	34,652,418	32,475,361	34,084,372

The freight car surplus for the last week of August averaged 162,397, a decrease of 32,930 cars as compared with the week before. This included 40,427 coal cars and 85,732 box cars. The Canadian roads for the same week had a surplus of 32,885 cars, including 30,275 box cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended September 5 increased over the previous week by 8,648 cars and totalled 64,644 cars. They were also heavier than for the same week last year by 16,932 cars. Grain loading in the Western division was much heavier by 9,748 cars, while the other commodities showed small increases.

COMMODITIES	Total for Canada			Cumulative Totals to Date	
	Sept. 5 1925	Aug. 29 1925	Sept. 6 1924	1925	1924
Grain & Grain Products	11,866	4,304	4,239	202,921	261,515
Live Stock	2,598	2,594	2,146	80,251	78,078
Coal	5,201	4,957	5,155	123,288	175,673
Coke	269	362	237	9,805	8,086
Lumber	4,035	3,933	3,209	127,302	129,351
Pulpwood	1,926	1,884	1,579	101,421	101,626
Pulp and Paper	2,045	1,907	1,734	72,646	70,902
Other Forest Products	2,370	2,435	2,017	102,541	94,806
Ore	1,423	1,351	1,420	48,654	44,507
Merchandise L.C.L.	16,995	16,695	14,128	542,329	514,247
Miscellaneous	15,916	15,574	11,848	434,987	416,671
Total Cars Loaded	64,644	55,996	47,712	1,846,145	1,895,462
Total Cars Rec'd from Connections	34,476	35,106	26,369	1,185,408	1,135,034

Two Vitally Important Developments*

A higher type of leadership needed—Building men for the future

By Roy V. Wright

Editor, Railway Mechanical Engineer, and Managing Editor, Railway Age

MANY things have happened in the past 10 years which have brought about radical changes in railroad shop methods, practices and administration. The shop crafts strike, for example, in 1922 proved to be a terrible experience for both the men and the managements. It had one lasting and beneficial result. It forced both sides to face the situation squarely and to do some real thinking about their mutual relationships. The year 1922 will in all probability mark the passing of large strikes and lock-outs in the railroad field. We are going back into the dark ages when we attempt to settle differences by brute force. There is no winner in such a contest—both sides lose, regardless of which one may come out ahead.

"If a house be divided against itself, that house cannot stand." We are coming into a period of co-operation. The ownership of a corporation or railroad is vested in so large a number of people that the executives act in the capacity of trustees and are just as much employees as are the workers in the ranks. In a very real sense, therefore, the executives and representatives of the managements and the workers are *co-workers*.

We now have several different types of co-operative endeavor in the railroad shops, extending all the way from organized co-operation on the part of the labor unions to various forms of so-called employee representation. All of these methods tend to emphasize the importance of the human element in the organization and to restore to some small degree, at least, that intimate contact between the management and the worker which was lost with the coming in of the present industrial age. Then, too, the limelight has been focused on the keystone of the arch in the organization—those men, foremen and subordinate supervisory officers, who come in intimate contact with the workers and lead them.

The Foreman and His Training

These foremen have the responsibility of interpreting the policies of the management to the men and in turn interpreting the needs of the men to the management. They hold a most vital and strategic position. It would seem that they should be selected only with the very greatest care and that they should receive a most careful course of training in leadership. Let us see what actually happens.

A bright young man, oft-times in these days with a high school training, will go into a shop and spend four years as an apprentice in training to become a mechanic. He has much to learn and at the end of his apprenticeship is still in many respects just a beginner. He does possess a certain degree of manual skill and understands how to operate certain machines and equipment. If he continues to develop, becomes a master craftsman and has a good personality, he may become a gang leader or foreman—indeed, if he is willing to study and work hard and pos-

sesses any great degree of executive ability, he may climb far up the ladder of success.

There is no more delicate or complicated piece of mechanism than the human being and no two individuals are alike. Treated and directed rightly, a worker will function with enthusiasm and great efficiency—misunderstood, even to a slight degree, and his efficiency and interest may fall off greatly. Surely, if it takes four years to make a mechanic who must deal with inanimate objects and operate relatively simple machines, it should take years of careful and painstaking work to prepare a man for a position in which he must lead and direct his fellow workers.

How much special training of this sort must a man have to qualify for the position of foreman? You know even better than I do how much he gets. It is, of course, true that certain men are born with the faculty of understanding their fellows and are natural leaders. They are comparatively few in number, however, and even these fortunate ones can benefit greatly by understanding clearly the basic principles upon which successful leadership rests. Not so many years ago people would have smiled if management had been referred to as an art or a profession. Today it is being recognized more and more generally as a science.

Have we not a real task before us in training men who must occupy positions of leadership in the future and of helping those who now hold supervisory positions to take advantage of the great amount of information which has been developed in recent years on the art of leadership?

This information is available from several sources and in different ways, if we will but busy ourselves to take advantage of it. On one road, at least, successful foremen training classes have been conducted under local leadership, but with the aid of a course provided by the extension department of a state university. Other universities have similar courses and I know of at least two different railroad points which are going to put on foremanship training courses this fall with the aid of the state universities.

Then there are a number of roads on which foremen's clubs have functioned. The programs of the staff meetings on many roads have been broadened to include discussions of problems relating to successful leadership. Several correspondence school study courses on foremanship training are available. Some roads believe in sending their foremen and officers to visit shops on other roads in order that they may broaden their ideas and see how other shops are administered. A few mechanical department officers are asking their associates to present written criticisms of articles in the technical papers or reports before railroad clubs or other organizations. At least one of these officers is concentrating this sort of a campaign on articles relating to foremanship training. There are other ways in which the foremen are being assisted in getting a better idea of the principles underlying successful leadership, as well as on up-to-date methods and practices. I imagine a most productive ses-

* Abstract of an address made at the annual convention of the International Railway General Foremen's Association, held at the Hotel Sherman, Chicago, September 8 to 11.

sion of this convention could be entirely devoted to the exchange of practical experience on this question.

Getting back to the very root of the matter, several mechanical department officers have suggested that the best type of foreman can only be produced by selecting the apprentices with the greatest possible care and then giving them a thorough apprentice training along the lines which have been so well worked out on the Santa Fe. I shall not attempt now, however, to discuss this matter of apprenticeship. For at least a quarter of a century the Railway Mechanical Engineer and its predecessors have consistently and aggressively advocated more modern apprenticeship training methods. Some progress has been made in this quarter of a century, but it is only within the past two or three years that the roads at large have shown any very great interest in this question and too many of them are still sound asleep or dozing.

Helping the Young Men

A splendid movement has been started in the interests of the boys and young men in railroad service. On some roads unusual care is taken in selecting boys for positions in the various departments. On other roads little if any attention is given to this vital question. Even under the best conditions boys are often found in a department or on a class of work who by nature are much better fitted for some other type of work. Some boys cannot be happy or do their best work unless it is particularly adapted to their peculiar abilities. Something must be done to help these boys find the positions in which they can function to the best advantage. More than this, however, any boy can do much better work if he receives the right kind of coaching and encouragement. I am speaking now not of apprentice training, but of the more or less informal contacts with the boys. It is doubtful if any other single investment will mean so much to the railroads in the future as that which can be made by the foremen and supervisory officers, as well as by some of the men in the ranks, in showing a real interest in the boys' welfare and giving them a reasonable amount of encouragement.

The Transportation Department of the Y. M. C. A. held a boys' or younger men's conference in connection with its tri-ennial conference at St. Louis two years ago. An attempt was made at this week-end meeting, which extended over three days, to give the boys some idea of the opportunities for life work on the railroads and to help them find themselves. Briefly, each boy filled out a form answering questions as to the kinds of work which appealed to him, what position he would like to hold ten years from now, etc. On the basis of these answers the boys were divided into small groups, each of which was assigned to the practical railway officer who could best talk matters over with the group and advise the individuals in it. I shall not take more time to explain just how the program was carried on,* but it proved so successful that it was found necessary to hold a similar national meeting a year later at Detroit, and a third meeting of this kind is scheduled at Pittsburgh this fall. In addition, one system, the Chesapeake & Ohio, carried out a similar program for its own boys and special care is being given in following this up and getting the foremen and officers to take a larger interest in all of the boys on the system.

After all, the thing that counts in a movement of this sort is the actual concrete results. I know of no way in which these can be better expressed than through the boys themselves. Five months after the Younger Railroad Men's Conference at Detroit, I wrote to all of the boys, asking them if they had received any help or inspiration from the Detroit conference, and whether they had been able to pass this on to boys back home who were

unable to attend the meeting. I want to read just a few typical extracts from the letters that I received in reply. Before doing so, however, just a word about the Detroit conference.

Results of Detroit Conference

The Detroit Younger Railroad Men's Conference was attended by 277 boys and young men and 51 leaders. Naturally, a certain percentage of the more ambitious and progressive boys went back home and started something. On the other hand, probably a large percentage of the boys personally profited greatly from the experiences at Detroit, but have not accomplished a great deal for their comrades back home, except that a change in attitude or conduct may have impressed itself upon those with whom they come most intimately in contact. Because the boys were carefully picked, undoubtedly the percentage of self-starters is fairly high.

Undoubtedly, also, the best results in specific communities have been obtained where the community was represented by several delegates. Where only one or two boys have come from a given point, it has been difficult for them to carry back and impress the spirit on their comrades, unless they are of unusual ability. Typical comments follow:

Car Repairer Apprentice, Boston & Albany.—"I would like to state that from the educational point of view, or in fact from each and any point of view you may look at it, I personally have failed to find the words that will express the great value and helpfulness that I got out of it. It has shown me a different spirit towards my work and also towards my fellow workmen, also a clean and better way to live."

Machinist Apprentice, Boston & Albany.—"Until the conference, things were sort of dead, but after the conference the fellows knowing the real meaning of service got to work. A greater interest was taken in our Christmas savings clubs. Americanization classes were started and a circulating library commenced. The officials hearing our reports soon understood that we were out to win and all sorts of help followed."

Clerk, Chesapeake & Ohio.—"Since the return of the other boys, we have gotten together and with the help of Mr. Watkins, our Y. M. C. A. secretary, we have organized a club known as 'The Ambitious Club.' The object of this club is to get the younger men and the employers in closer relationship. This club meets at the Y. M. C. A., every Monday night for about one hour and 15 minutes. The meetings are open and the business of the club is discussed. The rest of the time is spent listening to short talks and discussing questions arising in the office and shops with some high employee of the company."

Machinist Apprentice, Chicago, Rock Island & Pacific.—"Another value is to hear big railroad men talk—not only talk, but get acquainted with them. It's something that every boy and everybody doesn't get a chance to do. You also get acquainted with many railroads, railroads that you never hear about. First thing you'll ask, 'Where is this railroad and how big is it?' And what are the apprentices doing? You learn a lot of those things just from the boys sitting next to you at the dinner table, from the boys who are many miles from home attending the conference."

Machinist Helper Apprentice, Delaware, Lackawanna & Western.—"That conference has shown me what really great and many opportunities there are in the railroad game. It has encouraged me to study my daily work in the shops with greater interest. It has shown me that my employers are greatly interested in what the young men on our road are doing and that our employers are anxious to help us in our struggle to get ahead. Since the Detroit

* See *Railway Age*, November 22, 1924.

conference there have been greater activities among us apprentices at the Scranton shops of the Lackawanna."

Machinist Apprentice, Lehigh Valley.—"First, it has shown me that the more we come in contact with the big business man, the more we take to him and understand him. Second, it seems as if the work comes easier to us if we have a better feeling toward our employer. One thing I have learned since I came back from Detroit, and which I think the conference was to blame for, and that is not to form an opinion of a person until you have heard some of his good deeds as well as his wrong ones. Because if you stop to think, none of us is perfect. It also proved that to co-operate is to secure benefits for both parties and creates a better feeling between both employee and employer. And that is to get every thing out of it you can, especially to find out if you are in the right job. I think this was one of the most important questions asked. Because if you are not in the right job you are discontented and nothing seems to go right."

Sheet Metal Worker, New York Central.—"Possibly the most individual help was obtained through the Get-Together Meeting. Every young man was given the opportunity to discuss his problems with some older man who was well versed in that particular line of work. Such difficulties as: what a young man could make of himself with his own abilities, how a young man working at a trade which was not adapted to his standard of knowledge or abilities could become a better workman at some other branch of the service and at the same time serve his employer to a better advantage, were thoroughly reviewed and proved to be possible."

Clerk, Reading Company.—"When we returned home from the conference at Detroit, we decided that we should help the other fellows of our road. As a result of this decision we five who represented the Reading Company

at the Detroit conference, organized a younger men's club on our road.

"The club is known as the Reading Company Younger Men's Club. It meets the first and third Friday of each month, in the Y. M. C. A. auditorium.

"The purposes of the organization are as follows: (a) To develop its members spiritually, mentally, physically and socially. (b) To foster and promote a spirit of unselfish service. (c) To assist young men in finding their proper vocation. (d) To promote good fellowship among the younger men of the Reading Company. (e) To promote a spirit of friendly co-operation between employer and employee."

Apprentice Instructor.—"Personally, the Detroit conference was the biggest thing in my life and I see the railroad, my work and my boys and superior officers in an entirely different light than formerly. Railroading is no longer just a job, but the most important factor in the progress and development of our country. I do not know of a field that presents such a challenge or opportunity for service, improvement in methods, equipment, development and better human relationships."

Conclusion

I shall let these expressions speak for themselves.

Let us remember that the railroads are vital to the welfare and prosperity of the states and nation. If our foremen and supervisory officers are keen to take advantage of those things that will help them to improve their leadership ability and if we can select, train and inspire the new recruits so that they can find that work for which they are best adapted and in which they can be most happy, then we shall have gone a long way to safeguard the railroads of the future and the best interests of the communities which they serve.

Increasing Stores Efficiency

Experience demonstrates attractive possibilities by simplification in handling materials and supplies

By W. W. Tirrell*

THE United States Department of Commerce is responsible for the statement that the economic waste in six major industries exceeds ten billion dollars annually, a sum equivalent to the entire cost of government—federal, state and municipal—the value of passenger automobiles at retail prices plus the gasoline to run them, and the value of homes built in the United States. It is nearly double the amount spent for all building in 1924. It is 5 per cent of the total savings banks' deposits. It is one-half of the capital investment in railroads. It is 20 times the annual fire loss. This waste results from excessive varieties in styles, shapes, sizes, quality and other characteristics of material and supplies. Excessive quantities ordered and purchased result in obsolescence, slow turnover, clogged storage facilities, extra handling, etc.

Simplified Practice is the slogan with which the Department of Commerce seeks to eliminate such waste.

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Simplified practice means less capital tied up, less stock depreciation and obsolescence, less stock on hand, less storage space required, cheaper handling of stock, increased turnover, more effective stock control and reduced clerical overhead.

Simplification and Stores Departments

Simplified practice concerns the stores departments of every transportation industry. It is commonly estimated that the carrying charges on the material and supplies of public service properties is approximately 25 per cent of the value, which appears reasonable when consideration is given to storage facilities handling, distribution, interest, taxes, insurance, depreciation and obsolescence. The logical course for better stores control is the elimination of the slow moving non-standard material, and of excessive varieties, so largely responsible for obsolescence and other unnecessary carrying charges. The writer's studies of conditions on large properties have indicated feasible reductions in inventories of from 20 to 50 per cent. Generally speaking, over-requisitioning, with the consequent

obsolescence, is responsible for the waste of more than 10 per cent of the value of the material. Thousands of parts are carried, a large portion of which are usable on only a few kinds, styles or types of equipment. Much structural, signal and other maintenance of way material of special type or design has been found in stores unapplied and practically obsolescent.

In many organizations it is the practice for each department to exercise its own judgment in ordering material. Much material is ordered in anticipation of programs, which are never started. Such action results in frozen assets with eventual obsolescence. Department heads working under a budget system should realize that money spent for material to be held in stock depletes the treasury to the same extent as if actually charged to maintenance or construction accounts. Material should be ordered only after due consideration of budget requirements and the ascertained safe margin of stock supply. Replacement and construction material should not be ordered until the plans and specifications have received executive approval.

In many organizations the number of units of material in stock is exceptionally large and out of proportion to the use. Purchases are made of the same grades or kinds of material when little reduction is made in large supplies on hand. A study of the inventories of several years past, with the supporting data, will indicate little or no use of many units of material. Such stock is obsolete or practically so. It has been estimated by the Interstate Commerce Commission that material on hand should not exceed 10 per cent of the annual operating expenses. Department heads may well bear this in mind when ordering new material.

Centralization Avoids Duplication

One central stores organization should control all activities relating to, and be responsible for the requisitioning, receipt, custody, care and distribution of all material and supplies, including scrap and reclaimed materials. The central control should initiate all requisitions pertaining to regular stock material. Requisitions for the purchase of material for anticipated replacements, improvement and construction should be drawn by the central control after the last signature has been affixed to the authority for the expenditure. Frequently requisitions for the purchase of material are drawn greatly in advance of actual needs or delivery requirements. Central control will eliminate duplication of effort in the initiation and issue of requisitions and in the handling of invoices. It will possess information enabling it to draw all requisitions for the purchase of new material intelligently.

The classification of stores or material should be in conformity with the standard classifications of the American Railway Association. Material in storerooms should be sectionalized as far as possible, following the standard classification. Containers and receptacles should be so arranged as to conserve the energy and the vitality of the stockmen. Waste of energy is reflected in decreased labor efficiency and output and is opposed to the accepted theories of the best known efficiency experts.

Store Labor Is a Material Charge

Labor charges to stores expense should be closely analyzed. The line between superintendence and stores expense is not always clearly defined. Labor charged to stores expense is a material charge, an addition to the cost of the material. When stores labor or supervision is charged to superintendence, wage compensation figures are distorted.

No stores organization can be a success or conducted

without waste, if it does not know accurately its stocks and the rate of stock turnover. The foundation of every economic action is the determination of facts. Reliable statistics are essential in determining these facts.

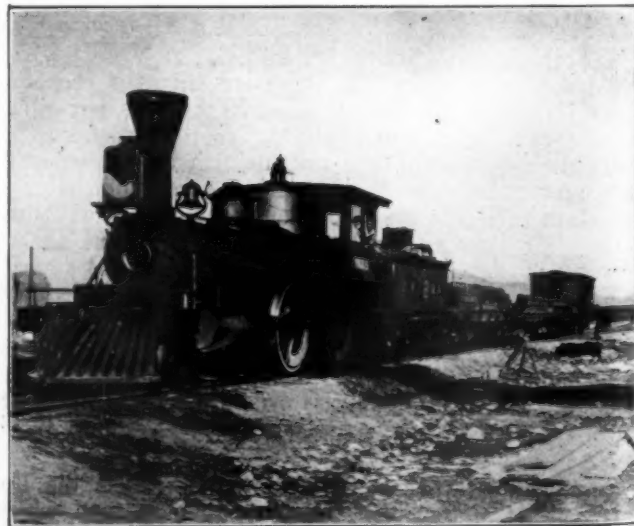
Material is converted money. Policing and safeguards are thrown around a bank—why not about material? Disbursements of material should be properly safeguarded with sufficient checks and balances to insure the safety of the material. Effective policing will insure a record of all material taken for any purpose. Accurate records cannot be maintained under lax methods and supervision. Verbal and telephone requests for material should be reduced to a minimum with follow-up records.

Descriptions Should Be Standardized

The transportation world should adopt one language for material. On the same system different storerooms often have different names for the same material. Inventories reaching the general office contain these variations but are passed over lightly since the main purpose of the inventories is to furnish figures for the general balance sheet. Many hundreds of thousands of dollars were spent in reconciling inventories in the settlements between the steam railroads and the government at the termination of federal control.

The major difficulty in bringing about simplified practice has proved to be skepticism or failure to appreciate its true worth. Executives of large properties learn from subordinate officers that all is well with *their* particular property while under-officers are usually inclined to interpret suggestions of waste in their departments as personal criticism. Yet the most fruitful results are usually to be obtained from investigations and studies which are conducted with not too great a faith in what has been reported or done.

CANADA'S 1925 wheat crop is estimated at 375,404,000 bushels, according to the latest report of the Dominion Bureau of Statistics. This compares with a yield of 262,097,000 bushels last year. A total yield of 446,337,000 bushels of oats, as compared with 405,976,000 last year, is forecast. Estimates of other crops are as follows: Barley, 94,650,000; rye, 15,802,000; flax seed, 8,666,100; peas, 2,983,300; mixed grains, 30,250,000; corn for husking, 12,475,000; potatoes, 43,545,000 cwt.; beans, 1,085,000 bushels; buckwheat, 9,385,000.



Locomotive Lent by the Union Pacific for Use in the Film, "The Iron Horse"

Providing a Railroad's Water Supply*

Increasing attention to quality and to pumping equipment are reducing transportation costs

By R. C. Bardwell

Superintendent Water Service, Chesapeake & Ohio



AMONG the many developments on American railroads during the past few years, the general improvement in the water supply has been evident and the efforts and expenditures made have apparently been rewarded with resulting economies. It is interesting to note in the monthly tabulations appearing in the *Railway Age* showing the comparative operating statistics of the Class I railroads, that among the regular leaders in improved performance are those roads on which attention has been given to water service. It is seldom realized that the railroads use, both in volume and weight, more water than all other supplies and commodities added together.

The cause for the retarded development of locomotive water supply can be explained largely by lack of definite responsibility. Water stations are usually designed and installed by the engineering department, operated by the maintenance of way forces, used by the mechanical department and the results affect the general operation. Instances are conceivable where the best results have not been secured because of lack of consideration for the various factors involved.

The estimated annual consumption of water by locomotives alone on the railroads of the United States is 630,000,000,000 gal. The cost of furnishing this water, not including maintenance, interest and depreciation of water stations is over \$35,000,000 per year. The total water consumption for all purposes is in excess of 900,000,000,000 gal. per year, with a total expense for all water, including maintenance, interest and depreciation on plants, of over \$50,000,000 per year.

Statistics indicate that there are more than 15,000 water stations in service to supply the water required for our large tonnage and passenger movement. This would indicate that the present cost for replacement of these facilities is between \$300,000,000 and \$500,000,000.

The consumption of water by individual locomotives is governed by many variable factors such as their condition, speed of operation, mechanical appliances such as feed water heaters and superheaters, curvature and grade of track, tonnage of trains, condition of rolling stock and track, and the ability and co-operation of the engineman and fireman. Tests indicate that Mikado and Consolidation locomotives in heavy freight service will use from 200 to 250 gal. of water per engine mile and the large simple Mallets between 350 and 400 gal. The water used per 1,000 gross ton miles will vary from 1.0 to 1.75 gal. Passenger engines will require from 100 to 125 gal. for each mile in service. The total consumption of water

should be governed largely by business conditions and the perusal of monthly water station reports is a fairly good index of the general traffic conditions on the road.

The most noticeable development in water station facilities during the past 20 years has been in tank construction. It is now a rare instance where a tank of less than 50,000 gal. storage capacity is installed and several have been built lately holding over 500,000 gal. of available water. With the increased cost and shortage of suitable tank timber, the use of steel has been largely augmented. Dependable concrete water tank construction has not as yet reached the point where it can be said to meet with universal favor. The form of steel tank construction appears to vary between the sloping bottom elevated tank and the flat bottom stand-pipe type, and is governed largely by local conditions.

Power units for pumping stations have been given considerable attention. Advantage is being taken of the economies afforded by the heavy oil engine development. Electric power with automatic control has afforded economies in some instances by the elimination of the attendance charges. Steam power has been found to be the most expensive. The report made by the Water Service Committee at the last meeting of the American Railway Engineering Association showed that fuel oil was the cheapest power method for pumping water; electricity, with automatic control, next; and steam and electricity with pumpers in attendance the most expensive.

The development in pumps during recent years has been most marked. The tendency now is for the gradual replacement of the expensive and difficult-to-maintain plunger pumps, with simple and inexpensive centrifugal types. The centrifugal pump has been considerably improved and now offers a pump of reasonable efficiency with few moving parts which are readily accessible and this unit, with oil engine or direct connected electric motor drive, affords a very adaptable installation for railway service. The delivery of the water to the locomotive also presents problems of interest. As an example, the railway with which I am connected recently purchased a large number of 12,000 gal. capacity engine tanks of the Vanderbilt type. It was necessary that the water column spouts be arranged to clear a guard rail, 15 ft. above track level, and then supply water to manholes opening at 12 ft. 6 in. and still be available for use on the small engine with manhole openings 7 ft. 6 in. above the track, or a five foot variation. With the co-operation of the manufacturers this problem has been worked out satisfactorily and columns are now commercially available which take care of these features.

The question of satisfactory water quality is of par-

* Presented before the St. Louis Railway Club, St. Louis, Mo., on September 11.

ticular economic interest to the railways. In 1914, the American Railway Engineering Association presented figures to show that the cost of each pound of incrusting matter permitted to enter a locomotive boiler was seven cents, considering only the effect on fuel consumption, boiler and roundhouse repairs, and engine time for them. This figure, transposed to present day prices, is 13 cents. Study by a special committee of the American Railway Engineering Association for the past four years has shown that this figure is decidedly conservative. In addition, the large intangible benefits, such as the elimination of engine failures on the road and reduction in delays to traffic and train movement, usually far outweigh the tangible savings in fuel consumption and boiler repairs. It is becoming a question now, not whether a railroad can afford the necessary expenditure for water treating plants, but whether it can afford to be without them, where needed.

All natural waters contain more or less foreign matter either in solution or in suspension and the relative degree of purity is dependent upon the locality in which they originate. Waters carrying heavy mud or sand readily indicate from casual inspection the need for improvement. Clear water, such as comes from a sparkling spring, may contain dissolved impurities causing an expense frequently much greater than the cost of water production. The amount and character of these impurities are easily determinable by simple chemical tests from which can be calculated the effect and costs in use. A water, the first cost of which is small and reasonable, may be found to cause damage and expense sufficient to warrant a complete change of source or a large expenditure for treatment. The benefits of water treatment are only limited when no engine failures occur due to water troubles and when flues last the full government limit with but a small protective coating of scale deposit.

Various methods of water treatment are being practiced, the oldest and probably the best advertised being the addition of boiler compounds or chemicals, such as soda ash, direct into the engine tanks or boilers. This process has been improved and cases where the material is added in solidified form which dissolves slowly either in the boiler through the washout holes or in engine tanks, and, in some cases in the roadside tanks, have shown good results on waters of moderate hardness. The disadvantage appears to be largely in the lack of a dependable system for checking regularity and properly proportioning the treatment.

The least expensive systematic treatment from a first cost standpoint is the addition of soda ash to water in the roadside tanks so that all of the sulphate or hard scale-forming matter is softened. This system is practiced extensively on the Wabash, the Chicago and Alton, the Frisco, and, to some extent, on many other roads. With careful supervision and close and systematic check, it can be made to give satisfactory results, but it has the disadvantage of producing such acute foaming conditions where the concentration in the boiler is not maintained within workable limits by frequent blowing down, that it is held in bad repute in many localities.

Some experimenting with Zeolite softening is being done at the present time on the Western Coast. This system provides for running the water through a filtering medium which has an interchangeable base. That is the filter absorbs the scale-forming elements and replaces them with non-scale forming alkali salts. At specified periods the filter is regenerated by soaking in strong salt brine solution. The experience with this system in this section has not been satisfactory due to the excessive alkalinity produced with resultant foaming and the cost for prefiltration and the salt regeneration was excessive.

The standard and usual method of water softening

consists of the use of lime and soda ash, added to the water in predetermined amounts at wayside settling tanks. Its object is not only to soften the water but to remove the precipitated sludge with other mud or suspended matter so as to deliver water to the boilers not only soft but clean. Common lime and soda ash are used for the reason that they are the lowest priced chemicals which can be obtained that will do the work efficiently and economically. The types of plants vary not only with the patented proportioning equipment, on the market, but also with the designs prepared to handle the local and individual conditions best. With proper attention and supervision, experience has shown that decidedly satisfactory results can be secured in the way of scale and pitting elimination and that the economies effected usually far exceed the estimate.

One complaint which occurs with nearly all types of water treatment to a greater or less extent, is the question of foaming. The foaming tendency of a water is affected by treatment only in an approximate ratio to the amount of alkali salts added by soda ash treatment or the sludge produced in the boiler through incomplete treatment. Without going into details, we can say that such situations can be held at a workable minimum and that such complaints usually indicate that the situation is not being properly handled.

The problem of water waste and incident expense is one which is being given attention on several railroads. This is a question, the extent of which is seldom appreciated, as water is usually regarded as a cheap commodity (if any thought is given at all), and little attention is usually paid to the many small leaks which can be found around most railroad terminals or stations. However, a check of the annual costs of these leaks in the aggregate is startling. I will not quote specific examples, outside of the large saving the Illinois Central has made through its water waste campaign. However, you are invited to check the figures on any individual railroad, comparing the annual fuel consumption, which figure is readily available, with the water consumption reported. Using the conservative estimate of one gallon of water evaporated per pound of coal burned for steam purposes and adding 25 per cent for legitimate wastes, such as drinking water, boiler washing, coal cleaning, etc., there will be left a surprisingly large figure unaccounted for which will represent a considerable loss at the unit figures.

The range of the problem of railroad water supply, including the installation and operation of the water stations as well as the quality corrections is wide and in view of the actual costs involved, as well as the effect upon transportation and train movement, well warrants the special study which is being given on many roads. In the handling of this problem, it is necessary to have the closest co-operation of the engineering, maintenance, motive power and operating departments to secure the best results. Cases where the responsibility for this work has been placed on a definite basis with a supervising head, with training along this particular line to direct the energies of the department in proper channels, have resulted in numerous economies. This fixing of definite responsibility not only at the head but also in the division organization even to the inclusion of plant operators, is well in line with the best practice of business organization. That there is urgent necessity for such organization has been proven by the results obtained by the railroads which have established a department to handle this important feature of railroad operation. The best of facilities will function only in a perfunctory manner or fail entirely if not followed up by a careful checking system. It has been found that an organization with definite responsibility is the first essential to successful railway water service operation.



Delegates at Bluefield Municipal Building

N. & W. Holds Efficiency Meeting

Employees hear reports of great improvement and discuss plans for further betterment

THE Norfolk & Western held its sixth system efficiency meeting at Bluefield, W. Va., on September 11 and 12 with approximately 300 officers and employees and 100 guests—shippers and others—in attendance. While no definite schedule for these meetings is in existence, the general plan is to hold them once each year. The last meeting was held in Cincinnati in May, 1924. Most of the delegates arrived in Bluefield on the morning of September 11 either by special train or by extra cars attached to regular trains. They were met at the station by the N. & W. Bluefield band which led them in parade to the municipal auditorium where the meeting was formally opened by Col. W. S. Battle, Jr., general claim agent of the company.

The delegates were then welcomed on behalf of the city by the mayor and the principal address was made by Judge Joseph Sanders, an attorney of Bluefield, who emphasized the value of efficient transportation service and congratulated the delegates upon the record being made by their company in this direction. This address was followed by several short talks and the meeting adjourned for luncheon at noon. In the afternoon the delegates were divided into committees which met separately to prepare their reports for presentation to the meeting as a whole. There were six committees of approximately 50 members each on the following subjects: Our Patrons; Better Service; Loading; Conservation; Co-operation; Co-ordination. The committee meetings adjourned at 4:15 p. m. and all the delegates were taken for a motor trip to the new Norfolk & Western freight station at Bluefield and other points of interest in the environs.

A banquet was provided in the evening at the West Virginian hotel. B. W. Herrman, vice-president in charge of traffic of the system, was scheduled as the principal speaker, but in his absence his paper was read by G. F.

Butler, general freight agent. The general subject of the paper was rates; it summarized the reason for varying rates, the principles of rate-making and sketched some of the history of the present rate structure. Music at the banquet was provided by the local N. & W. orchestra.

On September 12, the second day of the meeting, the delegates assembled under the chairmanship of J. B. Baskerville, assistant general claim agent, to hear and discuss the reports of the various committees. These reports were adopted substantially without change. A. L. Green, special representative of the Freight Claim Division of the American Railway Association, and E. DeHill, Jr., engineer for the Container Bureau, made short talks. The latter part of the meeting was featured by spontaneous expressions of regard for the railway by various employees present as delegates.

Recommendations of several of the committees follow in abstract:

Recommendations of Committee On "Our Patrons"

Advertise more our freight and passenger service giving publicity to past performance, particularly in freight service.

Avoid, as far as possible, creating in the minds of the patrons that you are passing the buck.

A more intense solicitation and closer contact with the shipping public in our local territory and that the operating department work closer with the traffic department, if possible, at local and competitive points in the interest of our patrons.

In signing letters to patrons, use the form "YOURS FOR SERVICE."

Half portion service on dining cars.

Local adjustments when possible by cashiers of overcharges and undercharges on billing.

Report of Committee On Better Service

We are a healthy railroad, but we should and could attain greater heights, should each and every employee in its service fully realize his responsibility, and get down and dig and per-

form his tasks as nearly 100 per cent as physical possibilities will allow, and not stop even then, but cast about to help some weaker neighbor.

Take stock of yourself now and then by asking and answering some questions. Does it give you any inspiration and a desire to improve your work, by hearing of some new record being set? Do you get any "kick" out of hearing of some already high record being broken, even though you had no hand in the performance? These things are happening almost constantly.

Familiarize yourselves with the rules and regulations of the company, and particularly those that pertain to your own individual tasks. If you are not clear on any point, or in doubt on any question, consult your superiors.

Perhaps the day is not far distant when this and other large employers will consider some definite plan of financial assistance for worthy employees desiring to further their educational attainments. This plan would probably be worth its cost as an automatic separator of the ambitious from the unambitious among the younger employees.

What has the public a right to expect of this as a railroad? They have a right to expect delivery of every item of every shipment that they send or receive. Failing to do this, is an admission of a fall-down somewhere, and lucid explanations do not satisfy them. When what they want is the goods ordered.

Committee On Loading

The essential things necessary for proper loading are: Proper packing in adequate containers; proper marking; legible bills of lading and waybills; checking and placing the freight in the right car; selection of cars suitable for the commodity loaded in; proper stowing and bracing in cars; proper supervision of all the above performances; request the traffic department to instruct all freight solicitors to handle with shippers with view to having case and bale numbers shown on packages and bills of lading for the purpose of proper checking.

The less handling that freight receives the better condition it will be in when it gets to destination.

We recommend: That a study be made to determine wherein break bulk points could be changed to advantage, bearing in mind the facilities now offered at Cincinnati, Bluefield and Pier "S" Norfolk; that a study be made in freight houses to determine where machinery could be installed to curtail handling of freight; that preferred attention be given to supervision of loading.

Recommendations of Conservation Committee

This committee made a detailed report covering the subject of eliminating waste on the railroad and then made several specific recommendations, some of which follow:

That Form CT 399 be revised to show capacity and length of cars ordered. The idea is that this additional information will to a great extent eliminate unnecessary switching occasioned by supplying cars of improper size.

The use of a certain type of hand lantern with respect to the consumption of oil is believed to be more economical than the one now in use.

That change be made in skids now in use for unloading. The cross pieces are too high and when barrels or oil drums are slid down they strike the braces, knocking skids down and permitting barrels to fall and burst.

That low class salvaged freight, such as brick, sewer pipe, etc., be disposed of at the station at which it is salvaged, instead of sending it to Roanoke.

Committee On Co-Operation

Co-operation between yard and agency forces with patrons should be promoted to the fullest extent possible.

Co-operation between yard and motive power departments can save our company many dollars in per-diem, terminal delays, etc.

Employees should strive to co-operate among themselves to be as economic and thrifty with their employers material no matter how small, as they can be so long as it does not handicap or delay some one else as a delay may be caused that would exceed the saving.

Company's Efficiency Improving

The company has been quite successful in increasing its efficiency in recent years and the improvement is ascribed, at least in part, to the interest aroused in the subject by local efficiency committees and these annual meetings. Col. Battle, in opening the Bluefield meeting,

sketched the improvement from a standpoint of claims and safety in part as follows:

In 1919, on a gross freight business of more than \$62,500,000, we paid in loss and damage claims more than \$917,000, being \$1.46 out of each hundred dollars of freight earnings. By careful and systematic effort we have been enabled to gradually reduce the money thrown away, until 1924 on a gross freight business of very nearly \$85,000,000, we paid out not quite \$414,000, which was 49 cents out of each \$100.00 of freight earnings. During the first six months of 1925, our record is even better. On gross freight earnings of more than \$41,500,000 for these six months, our freight claim payments amounted to a little less than \$161,000, a ratio of 0.38 per cent. Out of 35,600 freight claims filed against the N. & W. in 1924, only 37 resulted in litigation and in 16 of these, suits were filed before the claim had been presented.

Sometime ago a safety department was organized in an effort to save life and limb. In 1913 there were killed on the Norfolk & Western in all characters of accidents, whether to employees, passengers, licensees, or trespassers, 193 persons. In 1924 there were 93 deaths in all in which the railway company was in any way involved, a decrease of more than 50 per cent.

J. E. Crawford, general manager, reviewed conditions briefly at the opening meeting from the standpoint of the operating department in part as follows:

Last month the foreign cars on our lines averaged 68 miles a day. Time between terminals of trains has been at the rate of 12.8 miles per hour, and these trains have averaged nearly 2800 tons gross per train.

We have just had a report which shows that a locomotive was given firebox and heavy repairs in 19 days, which is 20 per cent quicker than it was ever done before. This spring we moved over 400 cars of potatoes from Norfolk through Columbus to Chicago territory and never had a claim or complaint. From Winston-Salem we moved last month about 300 cars of high class freight bound through Hagerstown, Columbus, Cincinnati, and out of the 300 cars, 98 per cent were delivered ahead of time or on schedule and only two per cent were behind schedule. This wonderful work was made possible by the train service men as well as the yard men and the car repair men. These cars are being repaired and forwarded under load usually on the same train, or within a very few hours thereafter.

There is one record, however, that we have not been breaking recently but I do not think it is the fault of the organization, and that is the car mile record, and while it is good, it is not up to what it has been. It is running about 38 miles per day per car; in 1916 it was up around 40 and 45 miles.

I saw a statement in a paper a month or two ago about a notice that was published 71 years ago in a Southern newspaper announcing that a certain railroad would haul 100 pounds of freight from Pittsburgh to Washington for 90 cents. Today the rate is 77 cents. The point I want to call your attention to is that 71 years ago a man was paid five cents an hour and today, though hauling freight for less money, even the laboring men get about 40 cents an hour, or eight times as much. That is what efficiency has done.

About 18 months ago we were getting about 8,000 miles per engine failure. Today we are getting 40,000 miles per engine failure. For the first seven months of this year, we consumed, on the basis of tons handled, 16 per cent less fuel than we did in the first seven months of last year.

Delegates to the system meetings are chosen by the local efficiency committees, the chairman of each of which is *ex officio* one, and by superintendents and departmental heads. By far the greater number of delegates come from the rank and file of the employees of the road, officers being in a decided minority. Some of the occupations which figure largely, selected at random, follow: agent, clerk, brakeman, conductor, engineman, yard brakeman, car inspector, yardmaster, section foreman, chairman loading and stowing committee, special agent, storekeeper, train dispatcher and so on through practically the whole list of occupations on the railroad.

THE POCATELLO (IDAHO) SHOPS of the Union Pacific on June 15, 1925, completed a year with no fatalities and with only four reportable injuries. The average of casualties per million man hours was only 1.43. During one period of 216 days, 1,692,098 man hours were worked without a single reportable casualty.

Future Looks Brighter for C. N. R.

The chance for early adoption of Senate merger—Traffic and earnings improve

SINCE the special committee of the Canadian Senate at the close of the last session of Parliament the latter part of June made public its plan for combining the Canadian National with the Canadian Pacific, there has been much discussion of the significance of this report. Is Canada becoming disgusted with its experiment in government ownership of railways and is it looking for a possible way out? Or, on the other hand, does the Senate report reflect the opinion of only a small minority which probably will have no opportunity, at least in the immediate future, to put its ideas into execution?

At the end of the first year, 1923, of the consolidation of all the properties under one management, hopes ran high. In that year the properties earned an operating net of more than \$20,000,000, as against less than \$3,000,000 in 1922. If the new management could work such a change in one year, what might it not do in two or three? These hopes were, however, disappointed. In 1924 the net from operations was only a little over \$17,000,000. The deficit after fixed charges was \$54,860,419 as against \$51,697,674 in 1923. The railroad's burden on the taxpayers of Canada, after being lightened for one year, became heavier again. And, as has been frequently pointed out, the railways' accounts of obligations to the government do not reflect all the expenses which the government has been put to on their account. These consist mainly of interest charges during construction and certain charges in connection with the lines operated from the beginning by the government, i.e., the Intercolonial and the Prince Edward Island. If interest on all these advances were charged against the railways, their deficit would probably be double what it is.

However, it is contended, and probably without justice, that these advances were made on a non-commercial basis—a price paid for national development—and that they are not a legitimate charge against the railway. It is further claimed, also with some reason, that some, at least, of the present charges represent the price of keeping unremunerative lines in operation, admittedly against the dictates of sound business policy from a railroad standpoint but justified by national economic policy. The government has taken over these railways, not to make profits, but to insure service to passengers and shippers on lines which, with the traffic now offered, would be unremunerative. The figure for the deficit after fixed charges shown on the railroad accounts can be safely used, therefore, in this discussion, provided its true character is known.

Greater Efficiency With Declining Revenues

The increase in this deficit of something over \$3,000,000 in 1924, as noted above, reflects no discredit on the management of the property. Operating revenues declined from \$253,135,487 in 1923 to \$235,588,182 in 1924, or 6.9 per cent. The management, by strict economy and constant effort to improve the organization, in the same time managed to reduce operating expenses from \$232,704,838 to \$218,343,931, or 6.1 per cent. Nor was this result secured by neglecting the maintenance of the property. Expenditures for maintenance of way totaled \$44,039,965 in 1924 as compared with \$44,778,445

in 1923. Equipment maintenance declined from \$52,176,320 to \$47,972,444, or but 8.1 per cent, and transportation expenses were brought down from \$120,302,450 in 1923 to \$110,085,033 in 1924—a reduction of 8.5 per cent. Revenue ton mileage fell from 18,546,404,436 in 1923 to 16,932,406,010 in 1924, or 8.7 per cent. The 1924 business, however, was handled with 29,811,416 freight train miles as against 34,073,929 in the previous year—a decline of 12.5 per cent. The ton mileage of revenue freight per train mile increased from 501.94 in 1923 to 516.83 in 1924—2.9 per cent.

Quite apparently, therefore, the Canadian National is not suffering from a decline in operating efficiency. It has, on the contrary, improved its efficiency in the face of falling traffic—and this without stinting on maintenance. The trouble with the property in 1924 was the lack of traffic. And the principal classes which suffered most in tonnage were bituminous coal, 23.7 per cent; wheat, 8.7 per cent; and lumber, 8.4 per cent. Revenue passengers carried likewise declined 2.4 per cent.

Prospects Bright for Remainder of Year

So far in 1925 there is still a shortage of traffic, and operating revenues are running behind those of last year even. However, operating expenses are being reduced at a greater ratio than the decline in receipts, so that for the first seven months of 1925 the operating net for the system was \$5,667,287, or 76 per cent greater than for the same period last year. Indications are, however, that the Dominion will this year have a big wheat crop—which it decidedly did not have in 1924. If this prediction holds true and the yield brings fair prices, the remainder of 1925 should be much more prosperous than the same period last year and prospects for the first half of 1926 will be much brighter than they were for the first half of 1925.

Unquestionably, therefore, the accomplishments of the management with the property give hope for much better things, given ordinary prosperity and growth for Canada. But, even by putting the rosiest possible construction on the situation, the problem is still a long way from being solved. The railway in 1923 earned an operating net of over \$20,000,000. Suppose that, by continued effective work and by a certain amount of good fortune in the way of favorable business conditions, the management in the course of a few years could bring this up to, say, \$60,000,000. This would wipe out the deficit shown on the books, but it would represent six per cent—a fair return—on an investment of only one billion dollars which certainly does not cover the cost of the properties to the people of Canada. The company's investment in road and equipment and other assets which should earn a return, as carried on its books, is almost double that amount—\$1,949,430,186. The company's long term debt totals \$2,056,181,517. Of this, \$913,913,082 is in the hands of the public and the rest is held by the Dominion of Canada.

Government Advances Made Capital Charges

Apparently the system will do very well if after a time it is able to meet the charges on the debt held by the public—to say nothing of that held by the Dominion.

Meantime each year the company's shortage of funds is met by advances from the Dominion treasury; so that each year its balance sheet shows greater indebtedness to the Dominion on account of principal and interest on new loans. The 1924 balance sheet carries a profit and loss debit balance of \$344,060,771. Now it is perfectly plain that a private company could not long continue business on any such basis as this. Either unprofitable services would have to be curtailed, or else the company would have to receive some sort of subvention which would be classed as income. This is practically what the situation amounts to on the Canadian National. The road receives the subvention, but it is not shown as such. Instead each advance from the government is put down as a capital charge against the property.

This matter of the Canadian National's capitalization is receiving attention and it is thought likely that some more honest plan will be adopted before a great while. And this is important, since the present situation of the Canadian National management is not unlike that of a marksman who, every time he improves his score even slightly, has the target moved a few yards further away from him—never giving him a chance to score a bull's eye.

Light Traffic Density

The Canadian National in 1923 handled 960,762 ton-miles of freight per mile of line. In the same year the railways of the United States averaged 1,615,741 ton-miles per mile of line and in that year the Canadian Pacific averaged 1,242,342 ton-miles per mile of line. If, by an increase in population of Canada and better business conditions, the traffic density of the Canadian National should increase to that of the Canadian Pacific or, better, that of the average for the United States, many of the more serious problems of the property would disappear. If a private company were operating the property, it would have found it necessary long hence to abandon operation on many unprofitable portions of the line. However, the government took over the Canadian National primarily in order to keep it in operation. Otherwise, beyond doubt, much of it would have perforce been discontinued.

Subvention Should Be Classed as Revenue

The operation of large sections of the property, therefore, is not a legitimate charge against the railway, viewed from the standpoint of business policy. Rather, it is a price which all the people are paying to provide service for some of the people whose prosperity is deemed necessary for the national well-being. It would be quite proper, therefore, and doubtless a source of great encouragement to the management of the property if the railway accounts were made to reflect only those railway operations justified by ordinary business standards and if advances from the government, insofar as they represented only the cost of keeping the unprofitable lines in service, be labeled frankly as a subvention and accounted for by the railway the same as revenue derived from other sources.

Such a change or a scaling down of the C. N. R. capitalization, the government acknowledging freely its losses and taking steps to cover them from its resources currently instead of postponing the evil day by compounding, will probably come in due time, whether any change takes place in the control of the Canadian National or not. Another improvement which, it seems, may be looked forward to is the reduction of wasteful competition between the C. N. R. and the Canadian Pacific, particularly in passenger service. The executives of the two properties have already had some conferences on this subject and the Dominion government is com-

mitted to the policy of attempting to bring them together on the matter. Public opinion of all political complexions seems to support the proposal.

The Senate Plan—Arguments for and Against

There can be no question of the serious financial aspects of the railway problem to Canada. The Canadian Senate plan reflects this anxiety on the part of the people, even if it does not reflect their opinions as to what had best be done about it. The plan has been described in some detail in the *Railway Age*; hence it will not be necessary to go into it minutely again. Briefly, it provides for amalgamation for operating purposes of the Canadian Pacific and the Canadian National with

First: Guaranteed dividends for the Canadian Pacific;

Second: Similar dividends for the C. N. R. on a reduced capitalization if anything remains after paying C. P. R. dividends;

Third: If there are still any proceeds from operations remaining, they should be divided on a pro rata basis between the C. P. R. and the C. N. R. in proportion to the respective valuations of the properties.

Advantages claimed for the plan may be summarized somewhat as follows: It would eliminate competition between the government road and the private road bringing considerable savings; it would scale down the C. N. R. debt to a figure on which a return might be expected and would not tend to allow the Dominion to go into debt further without seeming to do so; it would assure fairness to the Canadian Pacific, a great corporation which has had much to do with the upbuilding of Canada, against possible unfair competition by the government-owned road, thus maintaining Canada's credit in foreign money markets, which would certainly tend to fall if the position of the C. P. R. should be undermined.

Opposition to the measure might similarly be summarized as follows: The really wasteful competition between the two railroads can be eliminated by agreement between them. A complete monopoly, such as contemplated in the Senate proposal, might tend to become bureaucratic and inefficient so as to lose more than would be gained by eliminating competition. A monopoly would not give as good service to the public as it obtains under competition. Scaling down of the Canadian National debt can be accomplished without consolidation with the Canadian Pacific. As for fairness to the Canadian Pacific—the Canadian people have shown no disposition to patronize the government road simply because it is a government road; in competition the Canadian Pacific has as good an opportunity as the Canadian National. The people of Canada know that they cannot solve their railroad problem by transferring their patronage from the Canadian Pacific to the Canadian National. This is so because the Canadian Pacific is also a necessary railroad. It must be kept in operation. If the public should give all their business to the C. N. R. the C. P. R. might be in the same position that the C. N. R. now is. It would have to be kept in operation and, if it could not pay its way, the government would have to take it over and keep it going. Thus no good end could be served by starving out the Canadian Pacific for the C. N. R. and at the same time Canadian credit would slump. Again, the Canadian National has had only three years' trial under the present regime. It should have a longer trial before it is branded a failure.

These views are some way apart. Their only point in common seems to be their recognition of the interest of the Canadian people in doing something to improve a serious situation. Opinions as to the wisdom of the plan aside, however, what chance has it of adoption at an early date? Not much apparently.

Chances of Plan's Adoption Appear Remote*

The Canadian Senate is not an elective body. Members are appointed for life. Thus it is that, while the House of Commons—and hence the government—is controlled by the Liberal party, the Senate is controlled by the Conservatives from prior control of Commons. The Senate report on railways thus emanated from a certain section of the Conservative party. A general election has been called for October 29. If the Liberal party is returned to power or if the Progressives from the West should control, there is scant chance of the Senate's report or anything closely similar to it receiving favorable treatment by the government.* The only hope the plan appears to have at the present time is at the hands of the Conservative party. Yet, when the Senate announced this plan, just before the prorogation of Parliament, the present leader of the Conservative party made some rather caustic remarks about the report and there are few indications that he would be likely to support it. Victory for this proposal, therefore, seems to be somewhat remote and obtainable only by a Conservative victory and by a change in leadership within the Conservative party.

Other Railway Problems

And yet the railroad problem of Canada remains bulking large enough to tax the intelligence and the vigor of great railroad men and great statesmen. And it has aspects other than those just touched upon.

There is, for instance, the matter of rates. The Crows Nest Pass rates, establishing low minima in the Prairie provinces, have been discussed at length in these columns in the past year or two. They came into effect in July, 1924, and were removed in October of that year only to be restored again in February of the present year. In June, 1925, Parliament passed a law directing the abolition of these rates except as applying to grain and flour moving eastward to the head of the Great Lakes and instructing the Board of Railway Commissioners to examine all rates and to make changes wherever necessary to make the rate structure just and reasonable. This inquiry has begun by the reception of briefs from all interested parties by the Railway Board. Formal hearing will be begun shortly, but it will be months before a decision can be looked for.

The board has a difficult problem before it in the demand for low rates by certain sections and interests and the fact that discriminatory rates for the grain raisers of the prairies have been established by law will not tend to make their task any easier. The government in keeping in operation those portions of the Canadian National which cause the heavy deficits is admittedly using the railway for national economic development. The railway thereby becomes an agent to work for certain portions of the population and certain interests whose well-being the government considers important to the general welfare. Operating a railroad with the public in general paying a portion of its costs thereby becomes a function like that of, say, taxing the people to provide for dissemination of better methods of agriculture or taxing the people to provide for infant welfare or factory inspection or levying a protective tariff for the benefit of industry.

In any case the railroad so bolstered up by the public treasury ceases to resemble an ordinary commercial railroad and changes into an arm of the state for the performance of other ends than that of providing transportation at a reasonable profit. The Canadian National is managed in as business-like a manner probably as any government-controlled enterprise could be; it is organ-

ized like a private company and operated in much the same manner. But back of this lies the fact that the people of Canada realize that in one respect it is not actuated by business principles; that, in fact, it is being used for the benefit of certain people—those who are located on lines not commercially profitable and which would have to be abandoned if it were not for government aid. Other interests in Canada besides the persons benefited recognize this. For instance, a large body of articulate opinion in the Maritime provinces. In that section of Canada there is constant agitation to get the Canadian National to route more freight via Halifax and St. John rather than Portland, Me. Freight is routed by Portland doubtless because the railway management believes that such routing best serves the ends of economical operation.

The attitude of the Maritimes, however, as reflected in their press is: We are taxed to support the railroad (that is, for the benefit of certain sections of Canada which would not have railroad service if it were not for this taxation) and this railroad refuses to ship the bulk of its freight via our ports (in other words, refuses to use a part of the tax money to support less economical operation through our ports). State money is being used to keep certain parts of the country with railroad service, i.e., for the benefit of certain communities and certain interests. In spite of the desire to keep the railroad out of politics, there are always those who will recognize that tax money is being used to favor somebody else and will demand similar favors.

One Non-Commercial Function Suffices

The Canadian National has its hands full at the present time in fulfilling the *one* non-commercial function definitely saddled upon it—that of providing service in areas of light traffic. If it can manage somehow to do this until these areas are built up, it may some day be able to operate on a purely business basis, giving service only where economically justifiable and earning a return for its owners—the people of Canada. This is the outcome which the Canadian people as taxpayers hope for. It can be attained, however, only if they will constantly consider themselves primarily as taxpayers and not as individuals likely to benefit by political pressure on the railroad to cause it to favor industries or localities in which they are interested financially. The property cannot be made still further an economic instrument of the state by giving costly aid to this port or that mining development and at the same time become a diminishing burden on the taxpayers.



Delegates to N. & W. Efficiency Meeting Arriving at Bluefield, W. Va.

* See an article elsewhere in this issue giving railway policies of the opposing parties.

Security Holders Urge Rate Raise

Witnesses testify banks are determined not to invest in securities of roads in northwest

RAILROAD security holders on September 11 entered the hearing before the Interstate Commerce Commission at the Edgewater Beach hotel, Chicago, on the petition of western roads for a 5 per cent increase in freight rates. Grenville Clark, a New York attorney for eight emergency committees of security holders, announced that in introducing witnesses to show the position of security owners recommendation would be made for a 5 per cent increase in freight rate for the western carriers, and an increase greater than 5 per cent for the northwestern railroads. He stated that eight committees had been organized in the last 30 days to deal with emergency conditions with respect to the credit of the 18 class 1 railroads in the northwest. They represented securities of a par value of \$193,224,082 on September 8, when notice was filed with the commission, and at the present time the amount had grown to \$235,000,000. He urged that the rights of investors be considered in any determination of railroad freight rates, stating that to fix rates without regard to whether the result is calculated to attract or repel the capital required to develop and maintain the railroads obviously would be to leave out of account what is perhaps the most important factor of all.

Those testifying for the security holders were Charles C. Collins, president of the Lynn, Mass., Institution for Savings, and representing 109 savings banks of Massachusetts; Philip A. Benson, secretary of the Dime Savings Bank of Brooklyn, N. Y.; T. A. Hamilton, former president of the International-Great Northern and former vice-president of the St. Louis-San Francisco, and Charles H. Schweppe of Lee, Higginson & Co., an expert on the distribution of railway securities. In their testimony, Mr. Collins and Mr. Benson considered railway securities as an investment and declared that the credit of the northwestern roads had fallen so low in the last five years that the banks they represented had determined not to invest a dollar of the savings entrusted to them in the securities of any railroads in the northwest territory, irrespective of what the particular security is, until the present rates and conditions are adjusted to permit the lines in that section of the country to earn a fair return on their property.

Mr. Hamilton testified that the primary and direct cause of the bankruptcy of the Chicago, Milwaukee & St. Paul was inadequate freight rates. He stated that the St. Paul was the first of the northwestern carriers to break down under inadequate rates, its failure not being due to loss of traffic, inefficient operation, or over-capitalization. He urged a five per cent increase for emergency relief, but declared that special treatment would have to be given railroads of the northwest group to restore them to a fair earning basis. The separate treatment would require an additional increase based on facts to be determined later and could be accomplished only through the formation of a northwest group as distinguished from the central west and south west groups of carriers. When asked by Chairman Aitchison if special treatment would not also have to be given to the central west group because the St. Paul is a competitor of the Union Pacific he replied that after the remedy had been applied to the northwest group an investigation of rate structures to eliminate

the inequalities between the railroads of the two groups would be necessary.

Mr. Schweppe testified that the investment rating of the northwestern roads was now lower than any other railroad group in the country. He said that he did not know of a single railroad in the northwest group that could finance itself by the sale of stock at this time.

On the seventh day of the hearing the commission announced the schedule for six hearings to be held in different parts of the country. A recess will follow the present hearing which closed on September 16. A second hearing will be held on October 26 at Chicago, at which time the cross-examination of railroad witnesses will take place and the presentation of such evidence as is prepared will be allowed. On November 9 hearings will be held at St. Paul, Minn., on November 16 at Denver, Colo., on November 23 at San Francisco, Cal., on December 2 at Dallas, Tex., and on December 14 at Kansas City, Mo.

C. E. Spens Outlines Carriers' Proposal

C. E. Spens, vice-president of the Chicago, Burlington & Quincy, and chairman of the Traffic Executives committee, outlined the proposal of the carriers and gave their reasons for asking for the increases in rates proposed.

Regarding the Hoch-Smith resolution, he called attention to the fact that ratings already have been scientifically established with due regard to the character of commodities, value, character of packing, and weight per unit, or per combined capacity of car. An abstract of his testimony follows:

"While, under the law, the carriers are justified in asking an increase that will yield a fair return, and the duty of the commission is to adjust the rates to correspond 'as nearly as may be'; and while the formal application of these carriers now on file with the commission contemplates a readjustment that will produce the fair return, the carriers, in lieu of asking an increase of approximately 11 per cent in their present freight revenues, have amended that petition by suggesting an increase of only 5 per cent. The situation as to these carriers as a whole has become so acute that an emergency exists and relief should be forthcoming with the least possible delay. The carriers do not suggest an advance that might possibly in any instance affect the free movement of any traffic, although it is their judgment, based on experience with advances in the past, that even an 11 per cent advance would not have this result. The greater advance would, however, undoubtedly provoke greater opposition, with resultant greater delay in decision by the commission, while the lesser advance cannot invite legitimate criticism, and should lead to a speedy adjustment. Therefore, reserving all their legal rights the carriers submit this modified program which contemplates the restoration to them of less than one-half of the rate reductions effected by the commission through its decision in Reduced Rates, 1922.

"Based on the earnings and volume of tonnage transported in 1924, it is estimated that if this rate program were adopted, assuming equality of tonnage, the result would represent an increase, approximately, of \$89,528,210 in the net revenues of the carriers in the western group, or an increase as compared with 1924 of 5.4 per cent. The total net railway operating income, reflecting this increase, would represent a net return of only 4.66 per cent on the book investment account of these carriers as of December 31, 1924. This proposed increase in net earnings is arrived at by applying to the tonnage originating on western lines the specific advances proposed as to certain commodities and applying the 5 per cent to the earnings on the remaining miscellaneous tonnage.

"However, this figure of \$89,528,210 is only an approximate figure and represents an amount in excess of what the actual returns might be. For instance, it has been shown that the application of a 15 per cent per ton advance to the tonnage of coal and coke originating on western lines would yield an increase in rev-

enue of \$8,683,534. But, to secure this result a corresponding advance in the rates on bituminous coal from eastern territory to important terminals competitive as between eastern and western lines, like Chicago, Peoria and St. Louis, would be necessary, as unless this can be accomplished no advance would be advisable in the present rates on western coals to these important markets, and certain intermediate territory would also be affected.

"In the matter of rates on commodities to and from trans-continental territory on which no advance is proposed in some instances, and an arbitrary advance in others, no tonnage figures are available, and, therefore, no attempt has been made to eliminate this particular tonnage from the miscellaneous tonnage on which an advance of 5 per cent is asked, and, therefore, to this extent will the estimated increase in earnings also constitute exaggeration.

"The adoption of specific increases in cents per unit instead of percentage advances has been proposed for several reasons; one being that this plan will maintain existing relationships and that to maintain relationships under a percentage plan would materially delay publication of tariffs. Another important reason is that under this plan the more distant shipper will pay the same increase as the nearby, and the shipper who is located close to a market and therefore receives a greater price for his products, can better afford to pay the increase on this basis, than can the far distant shipper afford to pay on a horizontal percentage basis. This plan maintains equalization not only as between markets, but also as between the producers.

"In the matter of relative services performed, the transportation of grain and grain products involves items of extraordinary expense. Chief among these may be mentioned the milling-in-transit privilege on grain, which privilege is generally granted in the western group without additional charge, excepting in Texas and Pacific Coast territory. The rates on grain and on grain products for many years have generally been on a parity, also excepting in Texas and Pacific Coast territory. There are many mills located at interior points, also at terminal markets, and in order to permit of competition on equality between these mills and between grain markets the carriers have protected the through rates on grain from points of origin to final destinations on grain manufactured into products at points intermediate.

"A horizontal advance of five per cent is being asked in present rates on livestock and its products. Livestock is falling far short of contributing the percentage of the total carload revenue which it should contribute based on the percentage of cars required for its transportation to all cars used for the transportation of carload freight. For instance, in 1923, on the Chicago, Rock Island & Pacific, the per cent of carloads of livestock to total carloads of carload freight was 12.62 per cent, while the per cent of revenue from livestock to total carload revenue was 7.82 per cent. On the Chicago, Milwaukee & St. Paul the figures were 11.17 per cent and 8.12 per cent, and on the Chicago, Burlington & Quincy 16.73 per cent and 9.77 per cent, respectively. In 1924 the figures were: on the Chicago, Rock Island & Pacific, 11.85 per cent and 7.31 per cent; on the Chicago, Milwaukee & St. Paul, 11.82 per cent and 8.48 per cent, and on the Chicago, Burlington & Quincy, 17.10 per cent and 10.66 per cent.

"Figures showing the loaded and empty car miles by classes of equipment show a greater empty haul of livestock cars than of box cars, refrigerator cars, coal cars, flat cars, or of the average of all cars. The only classes of equipment that show a greater empty haul are live poultry, tank cars, and the minor item 'all other cars,' the latter item being confined largely to special company work cars.

"The excessive empty mileage on equipment for livestock traffic adds an extraordinary expense to the transportation of this traffic as compared with other carload traffic. Livestock must arrive at market within a given period, failure resulting in claims for loss and damage. Expedited service is also compelled by the federal twenty-eight-hour law. Expedited service means reduced train tonnage, and light train tonnage means greater cost of operation.

"Another item of expense to the railroads peculiar to the livestock traffic, but an item of value to the shippers, is the free transportation of so-called caretakers with the stock to market, and their free return in regular passenger trains, the latter provided they have accompanied two or more cars of stock to market. On 13 western lines, in 1923, operating a total mileage of 86,975 miles, the value of this transportation was \$3,337,896. Of the 216,081 attendants to markets during 1923, via the 13 western lines before referred to, there was no record of the return of 70,544.

"We are proposing a uniform advance of 15 cents per ton in the rates on coal and coke in the western district, including rates on coal and coke from eastern territory to points on western lines, the entire increase on the eastern products to accrue to western lines.

"Coal mines are located off the main line of the carriers, and necessitate a switching movement to and from the mines, ranging from a short distance to several miles. The gathering service of carloads of coal in mining districts for consolidation into trains is very expensive. The per cent of empty mileage to loaded mileage of coal cars will greatly exceed the per cent of empty mileage to

loaded mileage of box and furniture cars. As the movement of coal in western territory is more or less seasonal, the lightest movement being during the spring and summer months, there is idle equipment between periods. The peak of the movement is during the fourth quarter of the year, when the peak in traffic generally prevails. In eastern territory the coal traffic is well balanced throughout the year, due largely to the heavy movement of coal throughout the summer and fall months to lower Lake Erie ports for vessel movement to the northwest, and also to tide-water for trans-shipment by water.

"We propose a flat advance of two cents per one hundred pounds in all rates on lumber and articles taking the same rates, or arbitrates over lumber rates, to destinations in the western district. This uniform advance will serve to maintain existing differences in rates from the various producing sections to common markets.

"It is true that sand, gravel, etc., are of the lowest grade of freight, but they are moved, usually, only short distances. The average haul via the 21 lines was 63.53 miles, and in 1924, 63.39 miles. A very large proportion is used in the construction of public highways. Due to the short hauls, the ratio of terminal costs is, of course, greater to the transportation cost per mile than on other carload traffic generally.

"Our plan proposes that joint through rates on traffic between the western district and eastern and southeastern districts shall be advanced to the extent that earnings of lines in the western district are advanced, the entire advance to accrue to western lines. This plan is to be adopted as to all advances, including rates that are to be advanced a horizontal percentage, as well as rates we propose shall be advanced by a specific amount. We except from this plan, however, class rates between eastern territory and Illinois and southern Wisconsin pro-rating territory.

"Since lines in the eastern district are not a party to this case the rates between eastern territory and common western terminals, like Chicago, Peoria and St. Louis, could not be advanced, and the St. Louis rates apply to certain upper Mississippi river cities, not served directly by eastern lines. Furthermore, the Central Freight Association scale of rates applies on traffic moving between this so-called pro-rating territory and Central Freight Association territory, and the various rate groups in the pro-rating territory have been established on a specific percentage relationship basis, and, therefore, any advance to a portion of the groups and not to all would destroy the existing relativity. The question of readjustment of class rates in official classification territory is now before the commission in a proceeding initiated by the eastern trunk lines, and whatever adjustment may finally be established as the result of that investigation will, automatically, be reflected in the adjustment of rates to and from this pro-rating territory."

Hoch-Smith Resolution

"The Hoch-Smith resolution suggests that perhaps a general readjustment in our present rate structure is in order, due to the new feature introduced; that the government in establishing rates shall also give consideration to the economic condition of industry, specifically mentioning agriculture and livestock; and that freedom of movement may be promoted. The railroads contend that in the establishment of voluntary rates by the carriers, this particular feature, as well as the usual features governing rate making, has been given proper consideration.

"The commission is directed by Congress, under the Hoch-Smith resolution, to effect such changes in the rate structure as will promote the freedom of movement of products of agriculture, including livestock, at the lowest possible lawful rates compatible with the maintenance of adequate transportation service. Western railroads were built primarily to promote and develop production of the soil, including the livestock industry. There was no particular tonnage of other character to attract pioneer construction, and, as a matter of fact, there are today in the western territory great areas of land that produce only a minimum amount of other tonnage, and, therefore, these western railroads are very largely dependent for their livelihood upon the free movement of soil products and livestock. These items constitute a very large proportion of their total tonnage and of their total earnings.

"The rates on wheat and its products, as well as hay, in the western group, are now only 117.5 per cent; the rates on coarse grains, 105.75 per cent, and the rates on all other commodities 121.5 per cent of the corresponding rates in effect at the end of federal control, excepting that on livestock the increase is less than the 121.5 per cent on other commodities, due to the 20 per cent reduction in the rates for the longer hauls. And in General Order No. 28 the advance in rates on grain and its products, also on livestock, was also less than on other commodities, due to the maximum advances permitted of 6 cents on grain and 7 cents on livestock.

"It is evident that the principal items covered by the Hoch-Smith resolution have already received preferential treatment, as compared with other commodities, and that the present rates are the lowest possible rates that can be established in comparison with

existing rates on other commodities, as well as, taking into consideration the economic condition of industry."

J. S. Pyeatt Outlines Conditions

on Denver & Rio Grande Western

J. S. Pyeatt, president of the Denver & Rio Grande Western, described the commodity and revenue situation of the Denver & Rio Grande Western, showing the constituents of the traffic of that road, the character of transportation service required and the average revenue per ton. He also analyzed operating costs during past years, emphasizing wages and train tonnage limitations imposed by mountain grades. In addition, he dwelt on capital investment and return on investment. His testimony in part follows:

"The Denver & Rio Grande Western is one of the outstanding examples of carriers, located in the western district, whose present revenue situation and operating conditions reflect the extreme adversities confronting the western transportation industry as a whole.

"The marked decline, almost to the point of non-production, in the metal mining industry in Colorado and Utah during the past 10 years, has most seriously affected the Rio Grande's field of revenue production. Our secondary main lines and branch lines, originally constructed to serve metal mining districts, now serve growing agricultural and stock raising communities which must have continued adequate rail transportation if the states of Colorado and Utah are to be permitted to recover from the blow suffered by the decline of the metal mining industry.

"The agricultural and stock raising industries in Colorado and Utah have now developed to a point which justifies, from a transportation viewpoint, their being required to stand upon their own feet, with relation to other forms of industrial activity. There can be no justifiable reason for according these industries within these states a rate level which permits them to expand at the expense of other industrial development, nor solely to enter distant markets that they are not economically located logically to serve.

"The radical change in the volumes of the commodities handled by the Rio Grande during the past decade, resulting from the decline in the metal mining industry, without prospect of revival, succeeded by an increase in the lower rate bearing coal mining industry, together with the loss of transcontinental traffic which we have suffered with no prospect of recovery, have greatly restricted our revenue producing field, without offering an opportunity for a corresponding reduction in operating costs, or opportunity for any substantial abandonment of mileage.

"Prior to the World War, the Rio Grande's position as an exclusively mountain and desert railroad system, with resultant high operating costs and sparse population to be served, had been recognized by a higher rate structure than that accorded systems located in the more favorable prairie and plains regions. This position has not since been taken into consideration in the various general rate changes that have been made. Consequently, there has been no corresponding relief for the Rio Grande from the increased expenses of operation during this period, which, because of geographical location, have risen in even greater ratio than the increases met with by other western carriers.

"A striking example of these higher operating costs is evidenced by the fact that the Rio Grande's prevailing rate of pay for a brakeman is higher than the standard rate of pay for a conductor. These higher wage bases were originally established during the early negotiations with organized labor, about 35 years ago, under the conditions surrounding a newly settled mountainous country approaching the peak of its boom in the metal mining industry. The hardship, with respect to living conditions and restricted social and educational facilities then existing, have long since disappeared. Nevertheless, these higher wage levels have been maintained throughout succeeding years and have been confirmed by a government tribunal.

"On the four per cent grade, narrow gage train district traversing the Continental divide over Cumbres pass, the use of three narrow gage locomotives is necessary to secure a train tonnage capacity equal to one-sixth that of one moderate size standard gage locomotive on a 0.5 per cent grade line. In other words, it requires 18 engineers, 18 firemen, 6 conductors and 12 brakemen to perform the same service that one engineer, one fireman, one conductor and two brakemen perform in connection with the ordinary train load on a prairie line.

"The Rio Grande's property investment of \$167,000,000 in 1910 received a return of 4 per cent. At the close of 1915, after the further investment of \$13,000,000 in additions and betterments, the rate of return was only 3.6 per cent. At the close of 1920, after further improvements of approximately \$6,500,000, or a total since 1910 of \$19,500,000, a return of 3.82 per cent. For the period 1921

to 1924, after still further investment of approximately \$10,000,000, or a total of almost \$30,000,000 since 1910, the rate of return was only 1.43 per cent in 1924, or an annual average of but 1.96 per cent for the four-year period."

Stanley H. Johnson Opposes Change in

Present Group Divisions of Western District

Stanley H. Johnson, vice-president of the Chicago, Rock Island & Pacific, testified in opposition to any change in the present group divisions of the Western district as proposed by the Railroad Commission of Arkansas, the Corporation Commission of Oklahoma and the Railroad Commission of Texas in a petition to the commission at the opening of the hearing. An abstract of his testimony follows:

"In 1920, the Interstate Commerce Commission, for rate-making purposes, divided the western territory into two groups, the boundary line between those groups being represented by the Rocky mountains. This is generally satisfactory to the carriers, but information is at hand indicating that various state commissions, located in the southwest, intend to advocate in this case the segregation of the southwestern portion of the United States, for rate-making purposes, by including in a new group the states of Texas, Louisiana, Arkansas and Oklahoma, and certain portions of Missouri and Kansas.

"This proposition is apparently born of the theory that the southwestern roads are more prosperous than the northwestern roads, and that the general increase in freight rates should, therefore, be less in southwestern than in northwestern territory. This view is not representative of the true facts for any broad period of time. The small extent that any such condition may have been present has been temporary, and the indications are that it is changing, to the end that the northwestern carriers may probably in the future be relatively more prosperous than those in southwestern territory.

"As nearly as the figures may be segregated in the two territories, it appears that in the past four years the northwestern roads have earned an average annual return of 3.40 per cent, while the southwestern roads have earned 3.72 per cent. In two of these four years, the southwestern carriers have been below the northwestern carriers in the rate of return which they have earned, while in two years they have been above. In 1924, when the southwestern roads topped the northwestern in their rate of return, there were bumper wheat crops in the southwest and a shortage in the corn crop in the northwest. These conditions were the most prominent influences which caused the southwestern roads to make a relatively better showing.

"However, regardless of whether the southwestern carriers have been more prosperous in a temporary way than the northwestern carriers, the roads in both sections of the west have been earning substantially less than the fair return to which they are entitled, and an advance in freight rates in both territories is both necessary and justified."

Witnesses Show Farmers Are Prosperous

Paul P. Hastings, general freight agent of the Atchison, Topeka & Santa Fe, testified that no advances in transcontinental freight rates are proposed by the carriers on perishable traffic moving in large volume from the Pacific coast states. He stated that on transcontinental traffic certain exceptions in rate changes are proposed from the carriers' general petition for a 5 per cent increase in freight rates, and these exceptions fall generally within three classes. In the first class are those transcontinental rates which it is proposed to increase by flat amounts to preserve existing differential relationships. In the second class are those transcontinental rates to intermediate points where rates are graded. The third class includes those transcontinental rates in which no advances are proposed by the railways.

F. W. Koneman, vice-president and manager of the Citizens' Investment Company, Sioux Falls, S. Dak., stated that the farmer who did not speculate beyond his means in the period of wartime inflation is now better off than he was in pre-war years. He showed that the farmer is now getting better prices for his products than in pre-war times, and, with relation to other commodities, his available purchasing power is vastly greater. The rapid increase in the past four years in farm loans shows

that agriculture is now back on a reliable financial footing.

A. E. Van Petten, president of the Pioneer Mortgage Company of Topeka, Kan., testified that farm foreclosures in Kansas and Oklahoma have declined very rapidly in number in the last two years. Farmers in that territory are rapidly paying off their indebtedness and the agricultural situation has been greatly bettered in the last two years.

N. Holman, president of the First National Bank of Guthrie, Okla., also testified as to agricultural conditions. His testimony showed that agricultural conditions were favorable. According to his statement, the Oklahoma cotton crop in 1924 was 1,500,000 bales, the largest ever produced in the state, and this record placed Oklahoma second only to Texas in 1924 cotton production. This year's cotton crop is expected to come close to last year's in spite of the fact that recent weather conditions have been unfavorable, as the 20 per cent increase in acreage planted will keep the state's production level.

H. W. Moorehouse, formerly director of economic research of the American Farm Bureau Federation, and now general supervisor of the Agricultural Research Division of the Brookmire Economic Service, testified that the present purchasing power of the average western farmer in buying non-agricultural products is now 14 per cent above the pre-war level, and considering the country as a whole, the purchasing power is now 10 per cent higher. He also showed that the present western purchasing power per farm, which is 14 per cent above the average purchasing power in the years 1909 to 1913, has been exceeded in but two years since 1910, and those were the years in which this country was an active combatant in the world war. From 1922 to the present time, the purchasing power has increased 72 per cent, for the western farm while for the country in general it has increased 50 per cent. He showed that after deducting interest, taxes, wages, equipment, and material expenditures, there remained, for farm owners and operators in the country as a whole on June 30, 1925, a balance of \$5,140,000,000 or an increase of \$2,319,000,000 or 82 per cent, compared with the fiscal year 1922. The 1925 amount has been exceeded but three times in the last 16 years, and those peaks were caused by wartime inflation of agricultural prices.

W. J. Hagenah, a public utility rate expert, showed that the high prices which farmers have received for their products, have enabled them to liquidate most of their current debts and a part of their mortgage indebtedness, to repay notes and accrued interest at the banks, and to pay delinquent taxes. He stated that all branches of the farm machinery trade are again active, and the volume of their sales has increased greatly. Agricultural prices have risen until they are now relatively higher than the prices of other commodities, and those prices will prevail for several years. Since 1910 the number of farms operated has remained practically stationary, and the number of persons engaged in agriculture has actually declined. The non-agricultural population has increased from 60,000,000 in 1910 to 82,000,000 at the present time.

Frank C. Squire, engineer of the Western group, Presidents Conference Committee on Valuation, showed that present railway construction and equipment costs in the western district are more than 80 per cent higher than the corresponding costs in pre-war years. By a comparison of figures he showed that every general account in the classification set by the Interstate Commerce Commission for recording railway construction costs, shows a very marked increase in 1925 as compared with 1914, for performing the same work or for buying similar types of equipment. Among the items submitted, grading

showed an increase of 65 per cent, track laying and surfacing 126 per cent, locomotive prices 116 per cent, freight car prices 90 per cent, and passenger car prices 94 per cent. Rates of pay of the field and office engineering forces are approximately double those paid before the war, while ties have increased from 55 cents to \$1, track laying from \$450 per mile to \$1,000, and sand pipes and water columns \$200 to \$420.

Economists Testify

Walter Ferguson, vice-president of the First National Bank of Oklahoma City, Okla., and director of the Federal Reserve Bank of that district, testified that the position of agriculture in Oklahoma has been greatly strengthened in the last two years. He showed that crops have been good, and that they have been sold at fair prices, with a resulting advantage to the farmer and to the state in general. He signified that there is every indication that this prosperity will continue.

George E. Roberts, vice-president of the National City Bank of New York, stated that lower price levels are not now in sight. He testified that the general level of prices in the long run is determined by the standard of value and the existing facilities for supplying credit based upon the standard. The price level before the war was based upon gold, but the war forced the temporary abandonment of the gold standard, and caused so much credit to be used as purchasing power that the value of all money has depreciated, including gold itself. It would appear that if all the countries which have been off the gold basis were to resume gold payments and set about increasing their gold reserves, they would cause a demand for gold which might be expected to tighten credit and raise the value of gold as compared with commodities. There are counteracting influences of sufficient weight to at least greatly modify any such tendency, and in the opinion of many students of the subject probably offset it entirely for a very considerable period of time.

In view of the present conditions, he was of the opinion that the present system of prices is so firmly established, and its various features so interlocked, that there is no prospect of its being lowered materially except by influences which would operate very slowly over a long period of time. There is nothing in the monetary situation over the world which is likely to cause a lower level of prices within any period that can now be reasonably included in a forecast.

David Friday, economist and former president of the Michigan Agricultural College, stated that for the last hundred years the prices of agricultural products have tended to increase more rapidly than the prices of other commodities, and there is every reason to believe that this more favorable price trend which farm products have enjoyed will continue in the future. From 1897 to 1924, the prices of farm products increased 141 per cent, while the prices of non-agricultural commodities increased 124 per cent. The farmer has not only profited by an increase in the unit prices of the products, but has also profited heavily by the increase in the volume of his production which he has sold at these higher prices. From 1897 to 1924 there was an increase of 45 per cent in the physical volume of farm products. In 1924, as compared with the average in the six years 1909 to 1914, the value of crops in the west had increased 105 per cent, while in the east the corresponding increase was but 48 per cent. In the west south central states, the increase was 130 per cent, in the Pacific coast states, 132 per cent, and in the mountain states, 138 per cent. In the first 20 years of this century the value of farm land per acre had increased in the west north central states from \$19.37 to \$83.04; in the west

south central states from \$5.40 to \$31.18; in the mountain states from \$6.12 to \$23.88; and in the Pacific states from \$17.78 to \$74.21.

A recent study made by the North Dakota Agricultural College, in co-operation with the United States Department of Agriculture, covering 159 farmers in southwestern North Dakota, showed that the average date of settlement of these farmers was 1906 and in that year the average net worth of their properties was \$2,881, while in 1922 the average worth was \$19,473, a gain per farm of \$16,592, or an average annual net gain per farm of \$1,191. To show that the depression in 1921 did not strike agriculture alone, he stated that the net income after paying excess profit and corporation income taxes of all corporations in the United States fell from \$7,900,000,000 in 1916 and from \$4,200,000,000 in 1920 to a deficit of \$244,000,000 in 1921.

Byram Testifies Troubles of St. Paul Not Due to Cause Peculiar to That Property

H. E. Byram, receiver of the Chicago, Milwaukee & St. Paul, testified as to the financial condition of this road. He told of the effect of competition with the Panama canal and described the Potter Plan in reply to a question raised by John E. Benton, general solicitor of the National Association of Railroad and Utilities Commissioners. An abstract of his testimony follows.

In no year since the passage of the Transportation Act has the St. Paul or the roads as a whole in the Northwestern region and the Western district, earned the fair return of 5 3/4 per cent contemplated by the law. On account of the disturbed conditions resulting from the war which caused a severe business reaction in the territory in the north and middle west, the years 1921 and 1922 do not afford a fair test of the adequacy of the rates established by the commission. The years 1923 and 1924 reflect a normal condition of business as measured in terms of post-war conditions. There has been an adequate supply of good and efficient labor, and there have been no troubles or disturbances in this field of railroad operation.

The first seven months of 1925 show a decrease in the gross revenues of the St. Paul over the first seven months of 1923 and 1924 of \$10,502,968 and \$93,986, respectively, and a decrease in net of \$4,726,300 and \$2,280,045, respectively. We look for a better crop and fall movement in the last five months of 1925 than we had in the same period of 1924, and estimate that our gross revenue for the year will be approximately \$163,500,000, which will be an increase of \$5,000,000 over 1924, a decrease of \$6,000,000 from 1923. The net railway operating income for 1923 was \$20,167,713 and for 1924, \$18,972,106. In 1925 it will be less than in 1924.

On account of war conditions and federal operation of the railroads, in the four years 1917 to 1920 the operating revenues and expenses afford no value for comparative purposes.

The year 1916, which was the last year before the entrance of this country into the war, reflected a normal pre-war condition. In that year business was good; there had been little increase in the cost of labor or material and for the roads in the Northwestern region and the Western district there was a normal and proper relationship between the cost and charge for service. In the case of the St. Paul the margin was a safe, if not fully adequate one. In that year the St. Paul's net railway operating income amounted to \$29,607,212, or a return of 4.92 per cent on its investment in road and equipment, including material and supplies. With other income it had available for fixed charges and dividends the sum of \$31,663,571. The standard return of the St. Paul for the period of federal control, which was based upon the average annual net railway operating income of the three years June 30, 1914, to June 30, 1917, was \$27,844,327, or 4.64 per cent on the investment.

The present financial troubles of the St. Paul are not due to any cause of weakness peculiar or inherent to it, but are due to conditions which have limited its earnings in common with other carriers in the Western district, and in the Northwestern region particularly, to a figure much below that necessary to financial security. The St. Paul, having large maturities at this time, and a higher ratio of funded debt to capitalization, and with little income other than that from railway operations, was the first to fail, but if the present inadequate margin between cost and charge continues, others will fail also.

The stock market over a period of time accurately reflects the intrinsic value of a business based upon the earning power of that

business. If the earnings are good, the stock will sell at a figure which will reflect that condition; if the earnings are poor, the price of the stock will reflect that condition likewise. By examining the market value of the common and preferred stocks of the C. M. & St. P., the C. & N. W., the C. St. P. M. & O., the N. P., the G. N., and the M. St. P. & S. S. M. as reflected by the sales on the New York Stock Exchange during 1916 and the seven months of 1925, it will be seen that the shrinkage in the market value of the stocks of those companies during the past five years totals the astounding figure of \$633,000,000, or 56.4 per cent of the market value in 1916. Excluding the St. Paul, the shrinkage in those securities amounted to \$231,000,000, or 87.8 per cent; the loss in value of the securities of the other four roads amounted to \$402,000,000, or 46.8 per cent of their market value in 1916.

The average investment in road and equipment and material and supplies of the St. Paul for the years 1908-1909 amounted to \$275,891,116; its average net railway operating income for these two years amounted to \$17,837,294; the rate of return 6.47 per cent. For the average of the two years, 1923-1924, the investment in road and equipment and material and supplies of the St. Paul was \$733,336,553, an increase of \$457,445,437 over the average of 1908-1909. The net railway operating income for the average of the two years 1923-1924 amounted to \$19,569,909, or 2.67 per cent on the investment. The years 1923-1924, therefore, show a loss in return on investment, as compared with 1908-1909, of 3.80 per cent.

There has been an increase in the cost of labor on the St. Paul between the year 1916 and the year 1924, due to the Adamson Act and to orders of the Railroad Administration and the Railroad Labor Board, of 84.4 per cent. As these labor increases were outside the control of the railway managements this increase in the cost of labor in the case of the St. Paul is believed to be typical of the increase in the case of the other roads in the same territory. The cost of material has increased in the same period 67.1 per cent, and taxes 64.5 per cent.

In 1916 the expenses of the St. Paul, including a 5 3/4 per cent return, exceeded the gross revenues by 4.5 per cent, the road earning 4.92 per cent on investment in road and equipment including material and supplies. In 1924 this excess of cost plus a return of 5 3/4 per cent over the revenues had increased to 15.1 per cent. In that year the road earned 2.58 per cent on its investment.

Costs including the 5 3/4 per cent return on investment had increased 61.5 per cent over 1916. The increase in the rates amounted to 46.6 per cent. For the roads in the Northwestern region, excluding the St. Paul, the increase in cost amounted to 68.9 per cent over 1916, and the rates for revenue 46.5 per cent.

The failure of the gross revenues of the St. Paul in 1923 and 1924 to meet expenses plus a 5 3/4 per cent return is attributable to two causes: (1) Loss in business due to depressed conditions in the territory it serves, extensive growth of automobile traffic as a result of the construction of hard roads, and water competition via the Panama canal; (2) Rate reductions.

The freight density of the St. Paul in 1923 was only 2.7 per cent in excess of what it was in 1916, and in 1924 the volume was 5 per cent less than 1916. In the case of roads in the Northwestern region, exclusive of the St. Paul, the increase in 1923 over 1916 was 1.2 per cent and in 1924 there was a decrease of 6.8 per cent over 1916. The roads in the Western district, excluding the St. Paul, showed an increase in 1923 over 1916 of 9.1 per cent, and in 1924, 8.5 per cent. For the Eastern and Southern district roads the increase in 1923 over 1916 was 14.1 per cent and in 1924, 4.5 per cent.

The Panama canal was opened for traffic on August 15, 1914, but the European War, which commenced in the fall of that year, created so great a demand for the shipping of food supplies and munitions to Europe that there was little water competition in the transportation of coast-wise business.

In 1924 the total transcontinental tonnage amounted to 10,608,041 net tons, excluding California oil from the tonnage, which for the sake of conservatism we assume would not have moved by rail. If the canal had not been built this tonnage would have had to move across the continent by rail. Including the Canadian Pacific, there are ten possible routes over which this tonnage might have moved. Assuming it would have been distributed equally between the ten routes, the St. Paul would have received 1,000,000 tons which, with an average haul of 2,000 miles, and at an estimated average rate of one per cent per ton mile, would have added \$20,000,000 to its gross revenues.

On account of the predominance of the St. Paul's transcontinental business being eastbound the problem is to find some way of increasing the westbound business and balance the traffic. At the present time we haul one-and two-thirds cars westbound for every loaded car in the same direction. If freight for the Pacific coast can be found to fill these empty cars the additional expense is slight and a very low rate can, therefore, be charged.

(Continued on page 536)

New York Central Increases Capacity of Pier

Large and modern travelling, revolving cranes enable road to treble tonnage handled

THE New York Central has installed one 10-ton and one 20-ton travelling full-arch revolving crane on its West Shore pier 6, Weehawken, N. J. These constitute a marked addition to the equipment for handling heavy package freight at this point. This pier is at present used almost exclusively for handling boxed automobiles and trucks for export. Previous to the installation of the new cranes, steam derrick lighters and locomotive cranes were used on the pier and the transfer of 30 or 40 carloads of boxed automobiles was considered a good day's work. The railroad had previously

symmetrically placed on the northerly side of the pier, thus providing space for the storage of heavy package freight along the center line of the pier, approximately 30 ft. wide. The length of the pier overall, measured from the bulkhead line, is 868 ft. 11 $\frac{3}{4}$ in.

The 20-ton crane is provided with two two-wheel equalized trucks at each of the four corners, which arrangement provides for a maximum wheel load of approximately 37,000 lb. Both wheels in the inner truck at each corner are driven through cut steel spur and bevelled gears by a 60 hp. motor. The portal is of the plate girder type construction and the rotating structure is of the so-called pillar type, the pillar being built up of structural steel members. While the pillar has a bearing at its base, this bearing is designed to take lateral loads only, the vertical load being carried by a heavy cast steel ring at the top of the pillar. The outer side of this ring also forms the large gear with which the pinion effecting the crane rotation meshes. The main girders forming the floor of the machinery house are integral with the pillar construction. The boom is hinged at the forward end of the machinery house and the luffing action is obtained by means of specially designed screw and nut mechanism, which is operated by a 20 hp. motor through a cut steel spur gear reduction.

In the 20-ton crane, the main hook block, which is reeved in four parts is so located that a 60 ft. maximum radius is obtainable. The auxiliary 5-ton hook block is placed at the 70 ft. maximum radius. The minimum radius of these hook blocks are 25 ft. and 35 ft. respectively, which are obtained with the boom in its highest position. The principal dimensions of this crane are:

Span—34 ft. 6 in.
Wheelbase center to center of trucks—34 ft. 6 in.
Distance center to center of trucks at each corner—12 ft.
Distance center to center of wheels in each truck—3 ft. 6 in.
Overall length 53 ft. 1 in.

In the general structure arrangement, the 10-ton crane is practically a duplicate of the 20-ton crane but only one two-wheel truck is provided at each corner and one wheel in each truck is driven, this arrangement thus providing for driving half of all the wheels the same as in the 20-ton crane. The maximum wheel load of this crane is approximately 48,000 lb. The 10-ton hook block is located on the boom so as to obtain 70 ft. maximum radius and 35 ft. minimum radius. The principal dimensions of this crane are as follows:

Span—34 ft. 6 in.
Wheelbase center to center of trucks—34 ft. 6 in.
Distance center to center of wheels in each truck—4 ft. 6 in.
Over-all length—45 ft. 9 in.

The electrical equipment was designed to operate on 3 phase, 60 cycle, 230 volt current and is collected from two standard New York Central underrunning contact rails located one on each side of the northerly crane runway rail, the latter being used for the third element of the circuit. Standard New York Central collector shoes are employed, there being a total of four collector shoes on each crane, two on each contact rail.

All motors and control were manufactured by the Gen-



Twenty-Ton Crane—Boom at Minimum Radius

operated as many as four locomotive cranes and one or two steam derrick lighters were assigned to work on this pier. Since the installation of the new cranes from 100 to 130 cars per day have been handled over the pier, which is equivalent to about 700 tons of this high class freight. In other words, the installation of these modern machines has increased the capacity of this pier between 300 and 400 per cent.

This pier previously had a width of 75 ft. and in order to receive the crane runways and also to provide more space for the storage of heavy package freight, the southerly portion of the pier was reconstructed and the entire pier widened to 95 ft. There are four standard gage railroad tracks on the pier, the two southerly ones being centrally located under the crane portals on 13 ft. 3 in. centers and the two northerly ones being approximately

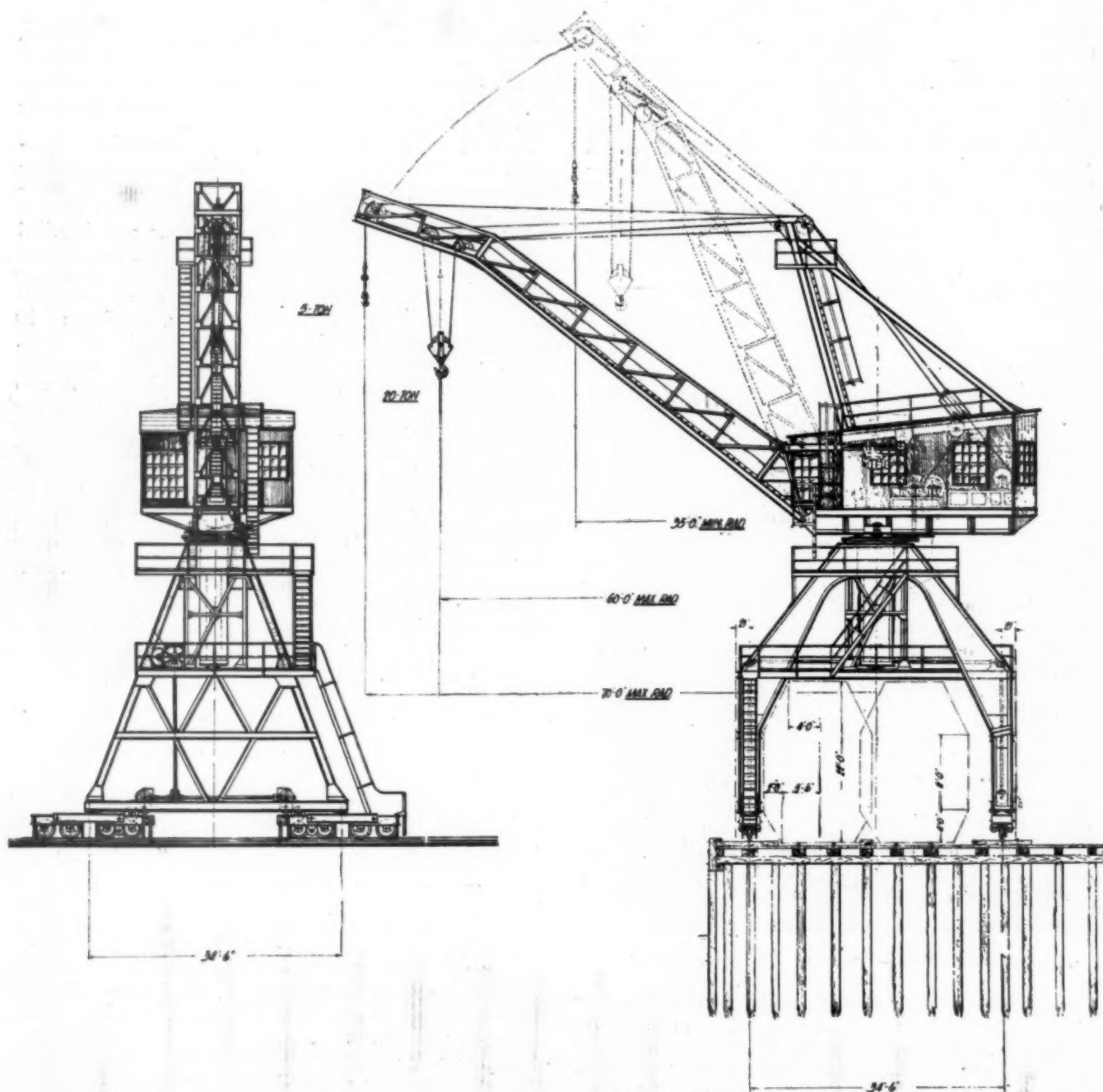
eral Electric Company. The motors for the respective movements on both cranes are duplicates, as follows:

Crane travelling motor.....	60 hp.
Rotating motor.....	20 hp.
Boom hoist motor.....	30 hp.
Main hoist motor.....	80 hp.
Auxiliary hoist motor.....	80 hp.

All motors are equipped with automatic solenoid load brakes, and the hoist engines have an auxiliary mechanically operated band brake. The switchboard and

handle lowers the hook block; rotating the controller handle to the right, for example, causes the crane to rotate in this direction. Reverse movements of the controller handle effectuate the reverse movements of the hook and crane respectively, simultaneously or individually.

In the case of the 20-ton crane, a unique controller arrangement was worked out. Two sets of combined controller units are provided. The first set operates the rotating motor in combination with the main 20-ton hoist



An Elevation and Section of the Crane and Dock

control apparatus is exceptionally complete in every detail. The several panels of the 20-ton crane, making up the switchboard being no less than 18 ft. long.

Magnetic control is provided for all motors, except those for the rotating movements, and suitable interlocking devices arranged throughout where required. The hoist and slew controllers are combined in such a way that one operating lever actuates both motions, the arrangement being such that depressing the controller

motor; the second set operates the rotating motor in combination with the 5-ton auxiliary hoist motor. A suitable switch is provided so that it is impossible to obtain current on more than one set of combined controllers at the same time.

Limit switches of approved design are installed on the main hoist, auxiliary hoist and screw luffing boom mechanisms.

The speeds of the several movements are as follows:

Travelling speed along the pier.....	150 ft.	per min.
Rotating speed	1.2 rev.	per min.
Boom hoisting speed	20 ft.	per min.
5-ton hook block 20-ton crane hoisting speed.....	160 ft.	per min.
20-ton hook block 20-ton crane.....	40 ft.	per min.
10-ton hook block 10-ton crane.....	80 ft.	per min.
Magnet hoisting speed 10-ton crane.....	80 ft.	per min.

The 10-ton crane is equipped with a 62 inch magnet for handling metallic freight and inasmuch as the operating current supply is alternating, a 15 kw. direct connected a.c.—d.c. motor generator set was installed in the machinery house on this crane, which furnishes the 230 volt d.c. current necessary for operating the magnet. Both cranes are equipped with hand-operated rail clamps, which are interlocked electrically in such a manner so as to make it impossible to move the crane by power while the clamps are in place.

The cranes were installed under the general supervision of George W. Kittredge, chief engineer of the New York Central; the mechanical details were handled by J. J. VanBuskirk, mechanical engineer of the road; C. L. Spaulding, district engineer, was in charge of the work in the field. The cranes were designed by Heyl & Patterson, Inc., fabricated in their shops and erected by their forces at the site, their part of the work being under the immediate supervision of E. Logan Hill, eastern manager.

Mack Rail Car With Multiple Unit Motor Control

A GASOLINE motor car each truck of which contains a complete power plant, with both controlled from either end of the car by means of an electro-pneumatic multiple unit control system, has been delivered to the Chicago, Rock Island & Pacific by the Mack International Motor Truck Corporation, New York. This car, which is the first of the type to be placed in regular railroad service, will be operated on the line between St. Joseph, Mo., and Altamont, making a daily round trip of 98.4 miles. Built into each truck is a Mack Model AC four-cylinder gas engine developing from 65 hp. to 82 hp. in a speed range from 1,000 to 1,400 r.p.m. In addition to the motor, each truck is completely equipped with its own gasoline tank, water cooling system and electric starting system. The power is transmitted from each motor to one axle of the truck through a single dry plate clutch and mechanical transmission of the selective

sliding gear type which provides four speeds forward and four speeds reverse. Each truck is also equipped with a 1½-kw. U. S. L. generator, belt driven from one of the axles, the equipment of the trucks being such that it is possible to operate each when removed from the car under its own power. The truck axles are fitted with Hyatt roller bearing journal boxes.

The feature of outstanding interest in the equipment



Multiple Unit Controller for Motors on Both Trucks

of this car is the combination electro-pneumatic equipment for the remote control of both power plants from either end of a single car, or the multiple unit control of the power plants on more than one car, from a single driver's station at the end of one of the cars. The electrical features of this equipment function essentially the same as the electric control of the multiple unit type in



Each Truck of the Mack Car Is a Self Contained Motor Unit—a Multiple Unit Control Station is Located at Each End

the operation of electric trains, the pneumatic features being interposed to perform the mechanical operations necessary in releasing the clutches and shifting the gears in the mechanical transmission and in the control of the throttles on the gasoline motors. One of the illustrations shows the control station at one end of the Rock Island car. It will be seen that there are two controller handles, that at the left controlling the throttles and that at the right controlling the clutches and gear shifts.

The various mechanical operations of the gear shift control are so interlocked electrically that they take place in proper sequence and without conflict due to any difference in time which may exist between the completion of any of the operations on the two motor units. Depressing the knob of the controller handle, which serves to unlatch the handle, causes the clutches to be thrown out pneumatically and the gear shifts of both motors to be brought into neutral position. The movement of the handle to another position and the release of the latch in that position causes the shift of the gears to the position selected and lets in the clutch when all of the gear shift movements have been completed.

Arrangements have been made for starting the motors by means of push buttons, one for each motor, at the control station on each end of the car, and also from the ground at the side of each truck. A single transmission switch controls the transmission circuits for both motors.

The connections between the car body and each truck consist of two electric cable jumpers and two air hose connections. One of the electric connections leads from the truck to the battery, while the other contains the electric control connections. One of the air hose connections leads from the mechanically driven Westinghouse air compressor on each truck to the main reservoir under the car body. The other supplies air from the main reservoir to the air cylinders which form the pneumatic part of the control system.

The car body was built by the Pullman Car & Manufacturing Corporation. It is 54 ft. long over the end frames, with a width of 9 ft. 7 $\frac{3}{4}$ in. over the side sills, and is of light steel construction. The underframe consists of two 7-in., 9.8-lb. channels, spaced 54 $\frac{3}{4}$ in. apart,

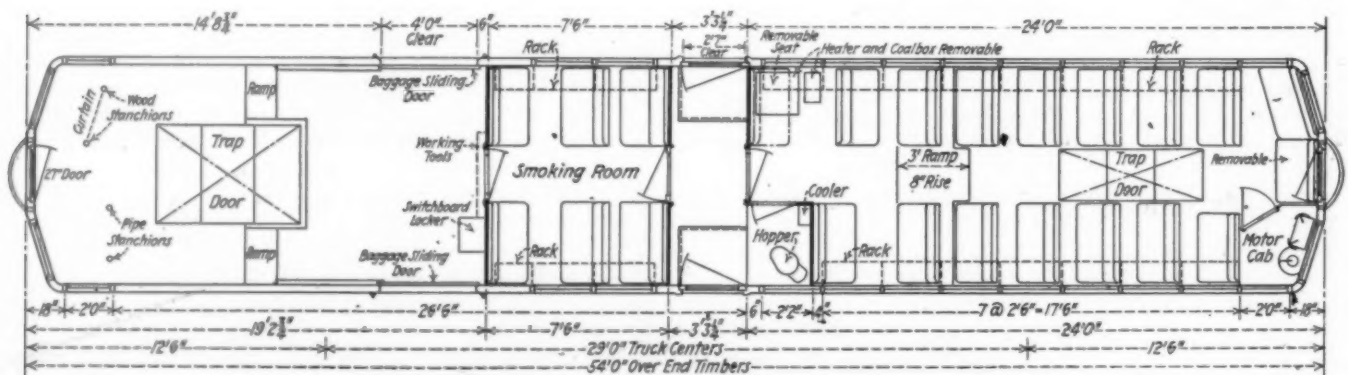
In order to provide clearance over the motors on the trucks, it will be seen on the floor plan that the floor at the ends of the car has been raised 3 in. higher than that in the remainder of the car, and that trap doors provide access to the trucks from the inside of the car to facilitate inspection and adjustments. The car has a total seating capacity of 46 and the baggage compartment, which



Passenger Compartment, Motorman's Cab at Right

measures approximately 19 ft. overall, has a capacity for 12,000 lb. The total weight is 62,000 lb.

This car was delivered from the plant of the builders at Allentown, Pa., to the C. R. I. & P. at Chicago under its own power, operating via the Lehigh Valley to Buf-



Floor Plan of the Rock Island's Mack Rail Car

with side sills of 2 $\frac{1}{2}$ -in. by 2-in. angles. The posts and carlines of the body frame are of light pressed steel channel section. The body is insulated with a course of 2-ply Salamander below the windows and a course of one-ply Salamander between the windows, behind the letter board and inside the roof sheets. The car is built with a center vestibule which divides the passenger space into two parts, that behind the baggage compartment serving as a smoking room and the other, which extends to the end of the car, constituting the main passenger compartments.

falo and the New York Central to Chicago. The trip from Allentown to Buffalo was made on September 9, the car leaving Buffalo at 5 a. m. September 10, passing through Cleveland shortly after 11 a. m. and leaving Toledo shortly before 3 p. m. Not far west of Toledo it was necessary to cut out one engine and the trip to Chicago was finished under the power of one motor at 1 a. m. September 11. After several days on exhibit at the La Salle station, Chicago, the car was placed in service between St. Joseph and Altamont on Wednesday, September 16.

Traveling Engineers' Association Convenes in Chicago

*One thousand members and guests attend opening session—
President Fee's address—Report on stokers*

THE thirty-third annual convention of the Traveling Engineers' Association was held at the Hotel Sherman, Chicago, September 15 to 18 inclusive, with about 1,000 members and guests in attendance at the opening session. The secretary's report showed a healthy condition of the association as regards membership, 105 new members having been obtained during the past year and 252 reinstated, making a total membership at the present time of 1,593.

The opening address was made by W. J. Fee, road foreman of engines, Canadian National, Lindsay, Ont., and president of the association, whose remarks are abstracted below. The association was also addressed by C. G. Bowker, general manager of the Grand Trunk Western, Detroit, Mich., who called attention to the splendid opportunity which members of the Traveling Engineers' Association have of improving locomotive service on the railroads through papers presented at the annual conventions and subsequent discussion. Mr. Bowker said that while the traveling engineer's duties are many, they all are important. He must keep a close supervision upon the power assigned to his territory, riding the engines frequently and keeping in touch with their condition. He must instruct engineers in the proper method of handling engines and see to it that they keep water at the proper level in the boilers, especially on superheated locomotives. He must see that his engines are properly lubricated in order to prolong the life of the cylinder packing and obtain the greatest possible efficiency in operation. Mr. Bowker also emphasized particularly the opportunity of the traveling engineer to improve locomotive performance through the prevention of carelessness and inattention to duty responsible for engine failures and also to a large extent for excessive fuel consumption.

The opening address made by President W. J. Fee, road foreman of engines, Canadian National Railways, Lindsay, Ont., was in part as follows:

President Fee's Address

Efficiency in railroad work is a matter of education and experience, and is mostly obtained through association with each other and exchanging the views of each other's experience. Give us the benefit of your experience, and we will keep our members in position to aid in bettering locomotive service on their various railroads. Our superiors will then be satisfied that it is to the interest of every railroad to send its traveling engineers to these conventions to keep them informed as to the latest developments in connection with locomotive equipment and operation.

No association can boast of a wider zone of usefulness, or a better record of achievement than this one. Transportation is the oldest and the newest problem confronting civilization. Transportation has been essential to human well-being and happiness, and has perhaps more accurately reflected human progress and achievement than any other industry, not excepting agriculture.

The locomotive being the prime factor in railway opera-

tion, the history of its development is a romance which has no parallel in the records of human achievement, nor can too much credit be given the men whose stupendous labors brought into practical form such devices as the air brake equipment, feed water heater, superheater, stoker, booster, power reverse gear, different valve gears and many of the numerous devices now applied to the present day modern locomotive.

Mechanical Stoker Progress

Up to June 1, 1924, 8,989 mechanical stokers had been applied to locomotives.

From information obtainable and from personal observation it should be possible for a mechanical stoker of the present-day type to operate approximately 90,000 miles on the locomotive before receiving a general overhauling; however, at the time the locomotive is receiving classified repairs the stoker should receive a thorough inspection and the necessary light repairs be made. It is presumed with reference to the above that the stoker and parts received proper lubrication and correct operation.

Maintenance Costs 0.1 to 0.15 Cents

Per Locomotive Mile

From information available, at sources where inquiries were made, as to actual differential covering cost and maintenance of past types of stokers over that of the present-day type, no figures were to be had; however, the standard type of stoker in operation today can be maintained for approximately 0.1 to 0.15 cents per locomotive mile.

This includes the cost of all stoker parts used at overhauling; however, minus cost of labor.

Due consideration should be given to the construction of locomotive tenders to provide fuel supply for the use of the fireman who either through lack of knowledge in the operation of the stoker or because of a clog occurring may be required to revert to hand firing. As a rule in case of stoker trouble a fireman will make added efforts to hand fire the locomotive if fuel is available without restriction. This will also increase the tendency of firemen to give proper consideration to the use of the scoop during standby and other delays, at which time the temperature of the fire-bed may become low, and if without forethought extreme care is not taken banks may form over the fire-bed through the use of the stoker.

On territory where the application of mechanical stokers is being considered it is important to establish the practice of removing all foreign and non-combustible material at fuel stations and coal mines. Delays will be eliminated by establishing this practice and continuity of operation assured to stokers, thus preventing interruption of service at critical periods of operation during sustained efforts on the part of the locomotive.

The inclination of individuals to study and qualify for promotion has through the application of the stoker shown itself on the increase. The present progressive examination is of such a nature that earnest study must be applied

for an individual to qualify from the position of fireman to that of a locomotive engineer.

Influence of Stoker on Detection of Packing Blows

Valve and cylinder packing blows should be observed with extreme care. Engine crews should be instructed in the art of testing for them. As the mechanical stoker can and will deliver the required fuel before the weakening of the locomotive due to loss of power is discernible, certain engine crews are not entirely familiar with the proper method of discerning and testing for valve and cylinder packing blows, especially so in the case of superheated locomotives.

Special attention should be given to replacement of stoker parts, as well as maintaining the openings in the firing nozzles, distributing arrangement and true alignment of such parts by the roundhouse forces.

Operation of stokers on inbound or terminal tracks, prior to the arrival or after leaving of crews, except by inspectors, should not be permissible. It is important that fire-beds be built up at terminal points and delivered to the crews in a light and level condition and free from clinkers. Prior to leaving the outbound track the whole stoker should receive close observation of the engine crew, in order to know that it is in serviceable condition and that the flow of fuel is available. Fire-beds should be built up by hand-firing and a proper degree of heat obtained. The thickness of the fire-bed is to be in proportion to the degree the locomotive will be worked and according to characteristics of the fuel used. Engineers should gradually work their locomotives up to the maximum working capacity needed, rather than in a sudden manner, allowing the firemen to bring the fire up to the proper degree of heat, depth and division of fuel over the grate area as a whole, so that forcing of the fire may not be required. This will insure getting the fire-bed at what we term a light, bright and level condition, which is necessary for securing the most economical results in consuming the

power from zero to a total maximum effort. With the mechanical stoker, dispatchers feel assured that they have a locomotive with which there is no doubt of failure resulting from the physical effort on the part of the fireman in being unable to maintain constant pressure under sustained effort.

The report was signed by D. I. Bergin, chairman, road foreman of engines, Wabash; J. P. Britton, road foreman of engines, B. & O.; J. H. De Salis, master mechanic, N. Y. C.; M. A. Daly, fuel supervisor, N. P.; and Henry H. Wilson, general road foreman, B. & O.

[A report of the later proceedings of the convention will appear in a succeeding issue.—EDITOR].

Great Northern Employees' Beautification Campaign

AS part of a campaign for the beautification of the shop yards the employees of the Dale street shops of the Great Northern at St. Paul recently dedicated a green house in the shop grounds which they had built on their own time and at their own expense.

A campaign to improve the appearance of the shops and grounds was begun by the employees about a year ago. A portion of the yards about the shops that had previously been covered with cinders and gravel was filled in with rich black soil and beautiful flowers and shrubbery planted. The space covered was about 100 ft. by 200 ft. in size. The employees felt it advisable to protect their bulbs and plants, and so, without any expense to the company, they built a model greenhouse 35 ft. by 45 ft. in which they will have at all times plants and flowers for use in the garden and elsewhere. A cellar is also provided under the greenhouse for keeping bulbs.

On the afternoon of August 29, about one thousand



Scene at the Dedication of Green House Built by Employees at Dale Street (Minneapolis) Shops of Great Northern

volatile gases of the fuel with resultant barometer of efficiency—a clean stack.

Modern Stokers Promote Reliable Operation

The schedule of the time table makers and tentatively expected performance of the extra as well as the regular trains by the dispatcher is based upon the even, steady and continuously normal performance of the locomotive. By no other presumption can the plans of the dispatcher become definite. Dispatchers must have certain confidence in locomotives as well as in engine crews to perform certain tasks. These tasks, regardless of weather conditions, the modern locomotives will do, even though called upon to develop in comparatively short time rates of horse-

employees and their friends gathered at Dale street shops and the greenhouse was dedicated. A telegram from President Budd to the employees was read by E. F. Flynn, assistant to the vice-president, in charge of public relations, who, on behalf of the 32,000 employees of the Great Northern, complimented the men upon their achievement and the spirit which prompted them in this commendable undertaking.

Entertainment was furnished by the general office quartette, the Girl Songsters, Jackson street shops band and employees of the Dale street shops. J. C. Heron, superintendent of shops, and Fred Conrath, foreman of the tin and copper shop, directed the employees in the construction of the greenhouse.

C. M. & St. P. Equipment Trust Authorized

WASHINGTON, D. C.

THE question whether railroads should be required to obtain competitive bids for the sale of securities is discussed pro and con by members of the Interstate Commerce Commission in connection with an order dated September 12 authorizing the receivers of the Chicago, Milwaukee & St. Paul to assume obligation and liability in respect of \$9,270,000 of 5 per cent equipment trust certificates, sold to Kuhn, Loeb & Co., and the National City Company at 97, following a hearing on September 1 after certain bondholders had protested because bids had not been asked for in connection with the sale. The order was issued by Division 4 of the commission, Commissioners Meyer, Eastman, McManamy and Woodlock. Commissioner Eastman, while concurring in the disposition of the case, wrote a separate opinion in which Commissioner McManamy joined, saying that the receivers should have obtained competitive bids, while Commissioner Woodlock, in a concurring opinion expressed strong doubts that any system of public competitive bidding would produce capital more cheaply for the railroads. In approving the issue the report of Division 4 said in part:

It was testified at the hearing that prior to the receivership a shortage of freight equipment existed on the line of the Chicago, Milwaukee & St. Paul Railway Company, and as a result a large tonnage which it could have expected to receive at competitive points was delivered to other lines and a serious loss in revenues was sustained. The testimony also showed large balances against the company for hire of equipment, suggesting that foreign cars had been used because of the lack of sufficient equipment of its own. It also appeared that the number of cars retired yearly, if not replaced, increased the shortage in car supply. These conditions had been determined and the management had decided to procure additional equipment to replace the retirals and to increase the supply available for loading, thus obtaining traffic it was losing and also reducing the amount of equipment hire. While negotiations for getting equipment were in progress, receivers were appointed. The necessity of procuring it was then brought to the court's attention and authority given to purchase it, as stated above. From the evidence it clearly appears that a need for more equipment exists and that the equipment proposed to be procured through this equipment trust will help to relieve the shortage.

The protest filed in behalf of certain bondholders was because bids had not been asked for in connection with the sale of the proposed trust certificates. The testimony showed that on July 2, 1925, a dealer in equipment-trust certificates called upon one of the receivers and intimated that he would be willing to pay as high as 99 for the certificates for immediate delivery. However, the certificates could not be sold and delivered at that time, as the equipment trust had not reached such a stage of completion. Subsequently the market declined so that when the trust certificates were sold on July 27, 1925, the price realized was 97 and accrued dividends. The dealer above referred to further testified that he considered 97 on July 27 a very fair price for them. It was further shown that the obtaining of this equipment and the sale of the trust certificates had been discussed with Kuhn, Loeb & Company in April, and that they had agreed to loan any amount up to \$3,600,000 that might be required to make the initial cash payment of approximately 25 per cent of the cost of the trust equipment, such loan to be made at current interest rate but not to exceed 6 per cent and the term thereof to be six months. The dealer making the offer mentioned was not aware that a loan for the cash payment had to be floated, which loan would probably be obtained from the banker buying the certificates, which fact would also have an influence on the offer made. It appears from the facts submitted that the price obtained was fair and comparable with current rates obtaining at the time of the sale was consummated, consideration being given to the decline in the market during the month of July.

Commissioner Eastman said in part:

This case has points of interest. The Chicago, Milwaukee & St. Paul was placed in the hands of three receivers on March 18, 1925. According to the record, on April 7 two of the receivers,

neither of whom was present to testify personally, talked informally with the court in regard to the need for new equipment and informed him that a purchase could be financed and deliveries secured in time for the crop movement in the fall. Early in the same month, the exact date not being stated, one of these receivers conferred with a member of the firm of Kuhn, Loeb & Company and received assurances that if the equipment were purchased that firm "would stand behind him so far as the financing of it was concerned," including a loan of the necessary funds for a 25 per cent cash payment if the carrier were unable to provide the funds out of its current cash resources. According to the record, on or about April 17 a member of the firm of Coverdale & Colpitts went to Chicago, and together with the same receiver met representatives of car builders and discussed the possibility of making deliveries prior to or on October 1. It will be noted that this is said to have occurred ten days after the talk with the court. The firm of Coverdale & Colpitts was then representing the Bondholders' Committee and the reorganization managers, the latter being Kuhn, Loeb & Company and the National City Company, and its advice was an important factor in convincing the receiver of the need for new equipment. During the period April 14-17 about 15 car companies were asked, under authority of this same receiver, to submit bids on the new equipment. The contracts were verbally assigned May 8-9 and this assignment was confirmed by letters of May 12, under the same authority.

The other receivers at that time knew nothing of this \$12,000,000 transaction, nor had the court approved the purchase. When the other receivers learned that the orders had been placed, they required a showing. They were at length satisfied of the wisdom of the purchase, and were especially gratified, so it was testified, at the manner in which competitive bids had been secured. The transaction was then submitted to the court, and was approved by him on June 2. According to the record, "The court was particularly interested in whether there had been competitive bidding for the equipment."

It seems to me extraordinary that one receiver should have committed the carrier to an expenditure of about \$12,000,000 for cars without the knowledge of the court or even of his co-receivers. It seems equally extraordinary that even after this knowledge had been gained, at least one of the receivers should for some weeks have been unaware that a practical understanding had been reached many weeks before as to the bankers to whom the issue of equipment-trust certificates should be sold, and that these bankers should, from the very beginning, have had a more intimate relation with the entire transaction, including the determination of the need for the equipment, than all but one of the three receivers. I am further impressed with the fact that the receivers and the court were "particularly interested" in and "gratified" over the excellent arrangements which had been made for obtaining competitive bids from the car builders. The same sound principle might have been but was not applied in the sale of the equipment-trust certificates. In this connection I may say that it is contemplated, according to the record, that the loan from the bankers covering the cash payment on the equipment will be repaid out of the earnings of the carrier before the end of the year. The note evidencing this loan enjoys the same priorities as receivers' obligations generally. No evidence was offered that a loan of this amount could not have been obtained from other sources.

The representative of Freeman & Company testified that equipment-trust certificates are "a preferred class of securities for investors"; that it would be "a very simple matter for railroads to get bids" on such securities; and that by means of such bids they would, in his opinion, "average about one-half of one per cent higher" on the sale. He further testified that his firm does not get chances to bid on such securities as often as it would like, and probably not in more than 10 or 15 per cent of the cases. In this particular instance, however, he testified that the price of 97 paid by Kuhn, Loeb & Company and the National City Company was "a very fair price" at the time when their offer was accepted.

I have had occasion in other cases to remark upon the fact that two large banking houses in New York City have a virtual monopoly of the purchase from carriers of most railroad securities for distribution to investors. In my judgment, this is an unhealthy state of affairs from more than one important point of view, and I have expressed the opinion that the time has clearly come to break away from these monopolistic conditions, certainly in the case of equipment-trust certificates and in the case of the smaller issues of bonds of unquestioned standing, such as guaranteed terminal bonds. Nothing has occurred to change this view of the matter; indeed, I am persuaded that the principle of competitive bidding may wisely and safely be given a much broader application. In this particular instance this principle, which was so well employed in the purchase of the cars, should also have been employed in the sale of the equipment-trust certificates; and the fact that the receivers were officers of the court should more readily have brought them to this conclusion. There is no better way of ascertaining the "current market rate." It so

happens, however, that the trend of the market has been adverse since the making of the sale, and in this instance the evidence on the whole tends to support the price paid. Under the circumstances I see nothing to be gained by attempting to upset the sale at this late date, and I, therefore, concur in the disposition of the case. I am authorized to say that Commissioner McManamy joins in this expression of concurrence.

Commissioner Woodlock, in his opinion, said that when Congress passed the transportation act in 1920 it elected to rely upon private management and private capital for an adequate railroad transportation system and that, "We have no right in the exercise of our regulatory powers to use the letter of the law in such a manner as to nullify its spirit." Continuing he said:

Manifestly, the cost of capital is one of the most important items in the finances of carriers, and our duty is to see that in the raising of capital this cost shall be as low as possible. That method by which securities are floated at the lowest cost to the carriers is clearly the method which is best under the law, and it is our duty to see that it is followed in so far as we have power to enforce it. I do not see that our present duty leads us beyond this point. Assuming—though it seems to be very doubtful—that the law gives us power to prescribe so-called public "competitive bidding" for railroad securities, the main question that we would have to ask ourselves is whether or not such a method would result in lower cost to capital to the carrier than does the present method. It does not appear that there is anything in the letter of the law (and there is certainly nothing in its spirit) which requires us to invade the domain of management with the object of accomplishing a "reform," as such, of banking methods. We are concerned, under section 20a, mainly to see that railroad capital shall be economically raised, and that it shall not be wasted after it is raised. We have no right morally (and I think we have no right legally) to interfere with management on any other grounds or for any other purpose, so far as security issues are concerned. No competent person has yet seriously suggested that public "competitive bidding" could wisely or safely be prescribed for railroad security issues in general. The reasons are so plain that they need no recapitulation here. It is with respect to certain classes only of securities that there is any room for argument. Equipment trust issues and issues of terminal companies (which together amount to probably less than seven or eight per cent of railroad securities outstanding) alone seem to possess a sufficient degree of standardization to make their selling value at any time mainly a matter of money rates at that time. Whether or not securities of this class could be sold to greater advantage under public "competitive bidding" than under the present method whereby they are usually sold to the recognized bankers of the issuing company is arguable.

As matters stand at present I have strong doubts that any system of public "competitive bidding" would produce capital more cheaply to the railroads than the method which has been generally followed up to date. Between such a system, however, and the system commonly in use, whereby carriers have dealt with their own bankers, middle ground has been tentatively occupied in several cases. The carrier has invited bids from several banking houses for the securities that it wishes to sell, and has sold them to the highest bidder. The Norfolk & Western Railway Company did this in 1924 and 1925 with, seemingly, good results. The Chicago & North Western Railway Company has notified us in connection with a recent application that it purposes to adopt the same method of sale. This is as it should be. Carriers themselves have taken the initiative in the experiment, and it is quite certain that if the experiment shall, as seems likely, prove successful, the method will come into common use. It is infinitely better that results come in this way than from the exercise of the powers possessed—if it does possess them—by this commission.

THE "SUWANEE RIVER SPECIAL" of the Southern between Cincinnati, Ohio, and Hampton, Fla., will resume its regular trips beginning October 5. This train runs over the Seaboard Air Line from Hampton to St. Petersburg, Fla. As in past seasons it will have sleeping cars to and from Chicago, Detroit, Cleveland, Cincinnati and Kansas City; also a car between Cincinnati and Sarasota, Fla. Southbound this train will leave Cincinnati at 9:50 p. m., one hour and 40 minutes later than last season. On the same day, the Southern and the Frisco Line will put on an additional through train between Atlanta, Ga. and Kansas City, Mo., leaving Kansas City in the morning and Atlanta in the evening. The addition of this train will provide double daily service between Atlanta and Kansas City.

Security Holders Urge Rate Increase

(Continued from Page 528)

It is difficult to estimate what the increase in the St. Paul's revenues would be if it were allowed to make rates to and from the Pacific coast in competition with water rates, but we believe, based on 1923 and 1924 business, that \$2,000,000 per annum is a conservative estimate.

Had the level of rates in 1921 been maintained and no reduction made from the general increase granted under Ex Parte 74, the increase in the rates or charges for service would have been approximately the same as the increase in cost, including a 5 3/4 per cent return. Under these conditions the roads in the Northwestern region in the years 1923 and 1924 would have earned slightly in excess of a 6 per cent return. The St. Paul on the basis of the 1924 business would have earned \$180,835,919, gross revenue, and a net of \$41,441,567, or a 5.64 per cent return on its investment. This sum would have been sufficient to pay interest on the funded debt, 7 per cent dividend on all stocks and leave a surplus of \$3,803,924.

The question may be asked as to what the management has accomplished in offsetting these rising costs by increased efficiency in operation. The net tons per train on the average have been increased from 511 in 1916 to 680 in 1924, or approximately 33 per cent. The gross tons per train on the average have increased from 1196 in 1916 to 1533 in 1924, or 27.3 per cent. The average load per car has been increased from 20.67 tons in 1916 to 25.36 tons in 1924, or 22.7 per cent. The consumption of fuel per thousand gross ton miles has been reduced from 204.2 lb. in 1916 to 171.6 lb. in 1924, a decrease of 16 per cent. Through the acquisition of the Chicago, Terre Haute & Southeastern, making available by direct connection with our own lines the coal mines of southern Indiana, there has been a direct saving in excess of \$1,000,000 per annum in the cost of company fuel. In 1916, with a gross revenue of \$82,476,004, there was paid out, on account of loss and damage to freight, a sum of \$1,083,634, or 1.31388 cents per dollar of revenue received. For the years 1919, 1920 and 1921, with an average gross revenue of \$113,223,481, there was paid out annually on the average \$3,195,969, or 2.82271 cents per dollar of revenue received. In 1924, with a gross revenue of \$124,613,957, the payment on account of loss and damage freight amounted to \$1,180,890, or 0.94764 cents per dollar of revenue received. This shows an increase in efficiency in respect to these claims of 27.87 per cent. Six hundred and forty-nine miles of first main line over the Rocky and Cascade mountains have been electrified, and the savings resulting therefrom amount to approximately \$12,400,000, on an additional investment attendant to the electrification of \$15,625,739.

Hearing Adjourns on September 16

The hearing at Chicago ended at noon on September 16 with the testimony of A. Herminy, assistant general auditor of the Chicago, Rock Island & Pacific; L. C. Fritch, vice-president of operation of the Chicago, Rock Island & Pacific; J. A. Streyer, traffic manager of the Southern Classification Territory of the American Short Line Railroad Association; W. A. Van Dyke, president of the Northwestern Mutual Life Insurance Company, and L. E. Wettling, manager of the Statistical bureau of the western railroads. Mr. Herminy and Mr. Fritch presented statistics showing the capital needs of the Rock Island. Mr. Streyer, testifying for the short lines, showed that these roads favored the increases sought in the petition. Mr. Van Dyke testified as a holder of railroad securities and farm mortgages who is interested in the improvement in both agricultural and railroad conditions. Mr. Wettling presented additional statistics for the carriers.

THE OUTPUT of coal from Canadian mines during May increased 19 per cent over the production for the preceding month. The figures were 664,236 tons in May, as against 556,213 tons in April. Production by provinces in May, when compared with the five-year average for the month, showed a decrease in all the coal-producing provinces of the Dominion except Alberta and British Columbia.

General News Department

The Clinchfield Railroad has contracted with the Prudential Insurance Company for group life insurance for its employees, about 2,000 in number.

D. B. McDonald, assistant general counsel of the Missouri Public Service Commission, has been promoted to general counsel, succeeding L. H. Breuer, who has resigned.

The Administrative Board of the American Engineering Council will hold its next meeting at Columbus, Ohio, October 29 and 30, under the auspices of the Engineers Club of Columbus. Chief among the topics to come before the Board is the study of commercial aviation now being made by the Council jointly with the Department of Commerce.

The Railroad Labor Board has resumed its hearings after the summer period of inactivity. Although no disputes of general interest are scheduled as yet, a matter of importance which will soon come up is the request of maintenance of way employees of virtually all the larger railroads for a general wage increase of about five cents an hour. Submissions on behalf of the employees in this case have been accumulating during the past two months.

A number of appointments were made at Ottawa last week by the government at the time it announced the dissolution of Parliament and an appeal to the federal electors. Included in the appointments was that of Nelson Rattenbury of Charlottetown, Prince Edward Island, to represent that province on the board of directors of the Canadian National. Another appointment was that of Thomas Vien, a member of the federal Parliament for a Quebec constituency, to the vacancy on the Dominion Board of Railway Commissioners caused by the retirement of W. B. Nantel. Mr. Vien has not, however, decided whether or not he will accept the post.

Decision in Southern Pacific Land Suit

In the Federal Court at Portland, Ore., this week, a decision was handed down in the Oregon & California Railroad land case, long pending in the Federal Court, under which the Southern Pacific is allowed \$4,075,478. The government had offered the railroad \$1,200,000, while the company had demanded about eight million dollars.

It is said that the lands recovered by the government from the old Oregon & California land grants are now worth at least \$30,000,000, chiefly from the timber on them. The east side grant was made in 1866, and the west side grant in 1870. The lands were given with two covenants—that they should be sold only to actual settlers and that they could be sold only in tracts of 160 acres each. The government alleged that when the Southern Pacific obtained the lands it went on the theory that it owned them outright, and proceeded to sell as it saw fit without regard to the covenants. In time the railroad company took these lands off the market and the government brought suit to compel the company to forfeit them.

Chicago Terminal Problem

The six railroads whose land holdings involve them in the proposed straightening of the south branch of the Chicago river between Polk and 16th streets, Chicago, have agreed to reply in two weeks to the proposal of the city that the railways pay the cost of the straightening of the river. The river straightening is considered an important step towards the construction of a passenger terminal to replace the present LaSalle street, Dearborn street and Grand Central stations. The report of a committee appointed by the mayor of Chicago intended to demonstrate that the railways would benefit from the river straightening to an amount sufficient to cover the cost of the work, was presented to the representatives of the six roads in Chicago on September 14. The roads involved are the Pennsylvania, the Baltimore & Ohio

Chicago Terminal, the Chicago & North Western, and the Chicago, Burlington & Quincy with property on the west side of the river, and the Baltimore & Ohio, the Chicago, Rock Island & Pacific, and the New York Central, with property on the east side of the river.

N. Y. C. Runs Passenger Engine Without Change Between Harmon, N. Y., and Chicago

On Sunday, September 13, New York Central engine No. 3334 completed its first round trip from Harmon, N. Y., to Chicago and return without change en route. The locomotive left Harmon, the terminal of the electrified division out of New York City, Thursday afternoon, September 11, at 6:30 p. m., eastern standard time, on the Lake Shore Limited, arriving at Chicago September 11 at 4:00 p. m., central standard time, after a continuous operation of 946 miles in 22½ hrs. After a layover of approximately 24 hrs., this locomotive started the return trip on the Lake Shore Limited at 5:30 p. m. Friday, September 12, completing the trip at Harmon the next day at 4:22 p. m. This constitutes a record for the New York Central which, however, already has increased the length of the locomotive runs on its through passenger trains so that the present practice is to change engines at Buffalo only, where formerly seven locomotives were required to complete the run between Harmon and Chicago.

L. & N. Awarded \$2,200,000 in Telegraph Suit

In the Federal Court at Covington, Ky., on September 12, Judge Cochran handed down a decision in the long pending suit of the Louisville & Nashville against the Western Union Telegraph Company, awarding the railroad company about \$2,200,000 for rent of its right-of-way occupied by the poles of the telegraph company. This decision sustains the findings of a special master who reported on the case several months ago. This litigation has been pending since 1912. A long-standing contract between the railroad and the telegraph company expired in 1909, and the lawsuit followed the refusal of the telegraph company to remove its poles.

By another suit, still pending in the courts, the railroad seeks to compel the Western Union to remove all of its poles. This has been decided in favor of the road but has been appealed.

The litigation now settled has occupied the attention of many courts, state and federal. After the cancellation of the old contract the Western Union sought to condemn an easement over the railroad's right-of-way throughout its entire system of approximately 5,000 miles. This was strenuously resisted by the railroad and resulted in litigation throughout all the states traversed by the railroad. The Western Union obtained injunctions against the railroad and continued to hold possession awaiting the termination of the suits. About 50 written opinions have been rendered by the appellate courts of the various states and by the federal courts in the different branches of this litigation. Seven opinions were rendered by the Supreme Court of the United States on issues appealed from the state and federal courts.

Delaware & Hudson Asks Review of Tentative Valuation

What was regarded as an effort to establish a possible new avenue of approach to a court review of a tentative valuation report of the Interstate Commerce Commission was made by the Delaware & Hudson on September 15 when the hearing on its protest against the tentative valuation report was begun before Examiner J. T. Marchand at Washington. The company had previously attacked the tentative valuation before the district court for the southern district of New York, which had held that there was no equity in an application "to suppress a merely preliminary step in a lawful valuation proceeding," and that the company had

not exhausted its remedy of a hearing before the commission on its protest.

After the Bureau of Valuation had introduced some brief testimony H. T. Newcomb, general solicitor of the Delaware & Hudson, instead of presenting witnesses on behalf of the carrier offered a motion that the commission vacate, rescind, withdraw, reconsider and revise the tentative valuation, in accordance with the requirements of the law, including analysis of the methods used and a finding of the original cost to date, and that the motion be determined by the full commission. P. J. Dougherty, attorney for the bureau, objected to the motion being received but was overruled by Examiner Marchand, who ruled that the motion would be received and referred to the commission. The examiner then called for the presentation of evidence. The attorney for the bureau said he had no further evidence to present until the carrier had presented its evidence and Mr. Newcomb said he had no testimony to offer until the commission had passed on the motion. Examiner Marchand then ruled that if any testimony were to be presented it would be necessary to introduce it at this time; and then he announced that the case was closed, subject to such disposition as the commission might make of the motion.

Program for the Regional Meeting of the

A. S. M. E. to be Held at Altoona, Pa.

The American Society of Mechanical Engineers will hold a regional meeting on October 5, 6, 7 at Altoona, Pa. Those attending the convention will be given the opportunity of visiting the Altoona shops, particularly the new \$2,000,000 locomotive repair shop which has been completed within the last two years.

The following program has been arranged:

MONDAY, OCTOBER 5

Morning and afternoon: Meeting of Council of the American Society of Mechanical Engineers.

Afternoon: Miscellaneous entertainments, such as golf and automobile trips to points of interest.

Evening: Dr. William F. Durand, president, A. S. M. E., presiding. Conferment of Honorary Membership in the American Society of Mechanical Engineers on General W. W. Atterbury, vice-president, Pennsylvania.

TUESDAY, OCTOBER 6

Morning: Technical Session.

Afternoon: Trip by special train to Old Portage, where party will detain to see the Old Portage where the incline planes were located by which passengers by canal were taken over the mountains. Special train will return by the Horse-Shoe Curve to Altoona.

Evening: Entertainment in Altoona.

WEDNESDAY, OCTOBER 7

Morning: Technical Session.

Afternoon: Visit to Altoona shops. One of the features will be the operation on the test plant of the first electric locomotive ever tested on it.

TECHNICAL SESSIONS

The entire program for the technical sessions has not been completed, but the following speakers have accepted:

Samuel Rea, president, Pennsylvania, on American Transportation.
Lawford H. Fry, metallurgical engineer, Standard Steel Works Company, Burnham, Pa., on Influence of the Altoona Test Plant on Steam Locomotive Development.

Samuel P. Bush, president, Buckeye Steel Castings Company, on Engineering Development in the Industries Generally to meet Railroad Wants.

A. J. County, Pennsylvania, on the Growth of a Great Transportation System.

Arrangements are being made to take care of the ladies, and an active committee will be in charge of a series of interesting events for them.

New Laws in Georgia

The legislature of Georgia, recently adjourned, passed five laws affecting railway interests. These were the "Grade crossing bill," the "Sale of unclaimed goods bill," the "Western & Atlantic commission bill," the "Atlanta viaduct bill" and the "Grade crossing elimination bill." A sixth bill, which would have placed motor bus lines under control of the state public service commission, failed to pass.

Measures to require automobile drivers to stop at dangerous grade crossings were introduced in both branches of the legislature. That introduced in the House was finally adopted. It provides that a commission be appointed in each county to determine which railroad crossings are dangerous. Railroads will be required to erect at these crossings signs stating that the law compels motorists to come to a full stop before crossing. Motorists failing to stop at such crossings may be fined or imprisoned. It

is stipulated that failure on the part of motorists to observe the law will not relieve the railroads from damage suits.

The Sale of unclaimed goods bill permits railroads to sell goods left unclaimed at the end of 60 days. Hitherto they have had to hold such goods for six months.

The Atlanta viaduct bill is a measure aiming to beautify the railroad entrance to Atlanta. Support from all of the roads using the Union Station has been pledged. The first step in the re-arranging of the Union Station terminal will consist simply in the construction of the two viaducts at Pryor street and Central avenue. Ultimately the covering over of the present lines to form a plaza will be an important feature.

The Western & Atlantic commission bill is expected to clear up the embarrassing situation of the Nashville, Chattanooga & St. Louis which has authorized an easement over the Western & Atlantic terminals in Chattanooga for the city of Chattanooga. This easement was protested by the state of Georgia, owner of the Western & Atlantic and the case is now in the courts of Tennessee where Chattanooga is trying to condemn the property for its use. This law creates a commission from the state of Georgia to deal with the city authorities and effect an exchange of property whereby a suitable tract of land adjacent to the Western & Atlantic terminal in Chattanooga can be exchanged for the property wanted by the city.

The bill to eliminate grade crossings provides that in cases where there is a dangerous grade crossing on a public or state highway, the same can be eliminated by re-location, an over-pass or an under-pass, the railroad to pay half of the expense and the state highways department the other half. Wherever the state highways department, in improving a road, comes across a grade crossing, it will co-operate with the railroad in eliminating it.

National Safety Council to Meet in Cleveland

The fourteenth annual safety congress of the National Safety Council will be held in Cleveland, Ohio, from September 28 to October 2. The steam railroad section will convene on September 29 at 9:30 a. m., in the Cleveland Hotel, at which time the reports of the officers, the appointment of a nominating committee and the reports of committees will be considered. During the morning session F. Hartenstien, assistant to the general manager of the Lehigh Valley, will speak on "Why Are We Assembled? What Is Our Goal?" and the discussion will be led by L. P. Green, superintendent of safety of the Minneapolis, St. Paul & Sault Ste Marie. T. H. Carrow, supervisor of safety of the Pennsylvania, will address the meeting on "What We Have Accomplished—The Possibilities Before Us." At the afternoon session, which starts at two o'clock, "Switching and Car Painting in Terminal Yards," will be discussed by R. G. Morris, supervisor of safety of the Pullman Company, and the discussion will be led by F. W. Curtis, supervisor of safety and fire prevention of the Denver & Rio Grande Western, and L. A. David, superintendent of the St. Louis terminals. "What Has Safety Done for the Shopman" will be discussed by L. V. Hart, general chairman of the International Association of Machinists, the discussion being led by J. A. McNally, safety inspector of the Wabash, and W. D. Lenderking, assistant, safety department, of the Baltimore & Ohio. "What Sort of a Fellow Should a Real Safety Leader Be," will be presented by S. M. Galaty, supervisor of safety of the Chicago & North Western. F. A. Hobbie, safety supervisor of the Eastern lines, Atchison, Topeka & Santa Fe, and H. M. Mayo, superintendent of safety of the Texas-Louisiana lines of the Southern Pacific, will lead the discussion.

During the morning session of September 30 the election of officers will take place. R. H. Aishton, president of the American Railway Association, will talk on "The Steam Railroad Section's Contribution to Safety." "The Foreman—His Relation to Safety," will be presented by F. W. Mitchell, director of personnel of the New York, New Haven & Hartford, and the subject will be discussed by W. A. Booth, director of safety and first aid of the Canadian National. O. F. Johnson, safety supervisor of the Minneapolis & St. Louis, will speak on "Observance of Rules—A Real Safety Measure." E. M. Mann, chief safety agent of the New York, Chicago & St. Louis, and H. A. Adams, assistant to the general manager of the Union Pacific will discuss this subject. W. G. Lee, president of the Brotherhood of Railroad Trainmen, will address the meeting on "Benefits Accruing to the Railroad Trainmen Due to Organized Safety Upon the American Railroads."

The fourth session will convene on October 1 at 9:30 a. m., the entire session being assigned to a round table discussion. The subjects are: safety in the maintenance of way and structures department; safety in the maintenance of equipment and general topics which will include the distribution and insistence of the use of goggles, guarding machinery, general safety conditions, safety committees making reports of accidents and publicity and education. Under safety in the maintenance of equipment, the discussion on the locomotive department will be led by J. F. Smith, safety agent of the Missouri-Kansas-Texas and that on the car department will be led by Z. B. Claypool, safety supervisor of the St. Louis-San Francisco. The discussion on the transportation department will be divided into parts, that on the road, which will be led by J. T. Pratt, supervisor of safety of the Reading, and in the yard, which will be discussed by O. F. Gnadinger, supervisor of safety of the Elgin, Joliet & Eastern.

Program of Signal Section Meeting

The regular meeting of the Signal Section of the American Railway Association is to be held at West Baden, Ind., on Tuesday, Wednesday and Thursday, September 29 and 30 and October 1.

Following is a list of the principal committee reports:

- X.—Signaling Practice. A brief study of the advantages of controlling all switches at a large station from a central cabin.
- V.—Instructions: testing electric locking; testing mechanical locking; training all employees; proposed handbook; definitions, A to C inclusive.
- VII.—Contracts and valuation.
- II.—Mechanical interlocking. Proposed changes in specifications 12,526, 13,226 and 13,826.
- II and III.—Factors which govern in determining the type of interlocking.
- VI.—Designs: 36 pages of drawings.
- Special Committee on Highway Crossing Protection. Report on progress towards standardization of highway crossing protection. Report of A. H. Rudd on action taken by American Engineering Standards Committee.
- IV.—D. C. Automatic Block Signaling. Effect of treated ties; resistance of D. C. relays; prevention of sweating of relays; prevention of sweating of mechanism cases; effect of lightning on track circuits; effect of foreign current on track circuits; resistance of insulated rail joints; operating characteristics of D. C. neutral relays.
- XI.—Specification for caustic soda primary cells.
- I.—Economics of Railway Signaling. Summary of papers presented at the March meeting on train operation by signal indication. Method of determining possible saving in train hours.

In addition to the regular committee reports, seven committees plan to present short essays or discussions illustrated by the stereopticon. These are:

- Tuesday, Committee VII; G. E. Beck, on valuation work.
- Tuesday, Committee VIII; H. M. Towne, on lightning protection.
- Wednesday, Committee I; F. H. Hammill, train operation by signal indication.
- Wednesday, Committee IX; F. M. Carpo, recent development in galvanizing iron and steel wires.
- Wednesday, Special Committee; A. H. Rudd, on highway crossing protection.
- Thursday, Committee XI; A. B. Himes, caustic soda cells.
- Thursday, Committee IV; J. B. Wiegel, improvement of D. C. track circuit.

Secretary H. S. Balliet advises that a brief report on automatic train control is expected. The pamphlet containing the committee reports to be presented at this meeting contains also 68 pages filled with papers which have been read at Sectional Committee meetings at various cities.

General Foremen's Supply Men's

Association Elects Officers for 1926

At the regular meeting of the Association of Railway Supply Men, held in conjunction with the nineteenth annual convention of the International Railway General Foremen's Association at the Hotel Sherman, Chicago, on September 8 to 11, the following officers were elected for 1926: President, E. E. Thulin, Duff Manufacturing Company, Pittsburgh, Pa.; secretary-treasurer, E. J. Fuller, Hunt-Spiller Manufacturing Corporation, South Boston, Mass. Members of the executive committee are Arthur Haller, American Locomotive Company, Chicago; A. N. Willsie, Locomotive Stoker Company, Chicago; C. M. Hoffman, Dearborn Chemical Company, Chicago; and C. F. Weil, American Brake Shoe & Foundry Company, Chicago.

The exhibit of machinery and equipment was furnished this year by 76 railway supply companies. The companies, the products exhibited and the representatives in attendance, were as follows:

Air Reduction Sales Company, New York.—Oxygen acetylene and welding cutting apparatus and supplies. Represented by R. T. Peabody, G. E. Phelps, Joe Kenefic, T. M. Hamer, W. H. Ludington and John Ondhoff.

American Arch Company, Inc., New York.—Arch brick. Represented by A. W. Clokey and William Allison.

American Locomotive Company, New York.—Model of three-cylinder locomotive, power reverse gear and flexible staybolts. Represented by G. P. Robinson, Arthur Haller and Robert Brown.

American Steel Foundries, Chicago.—Cast steel car wheel, adjustable clasp brake, brake head, one-piece reversible fulcrum brake beam, vertical key yoke, adjustable coupler pocket, brake beam support and pictures and catalogs of specialties. Represented by W. C. Walsh and W. G. Wallace.

Ashtabula Valve Company, Boston, Mass.—Dead weight tester, driving wheel quartering gage, wheel press mounting gage and air inspection test gage. Represented by Charles Gaston.

Atkins, E. C. & Co., Indianapolis, Ind.—Silver steel hack saws. Represented by C. E. Drake, H. G. Hoag and L. L. O'Key.

Atlas Steel Corporation, Dunkirk, N. Y.—Railroad tire turning tools, high speed hot rolled tool steel sections, cold drawn tool steel sections and drop forged high speed steel cutter blanks. Represented by Harry Hardwicke, W. G. Zetsche and Walter Bould.

Barco Manufacturing Company, Chicago.—Plug valves, flexible joints, reverse gear, engine and tender connections, car steam heat connections and roundhouse blower. Represented by F. N. Bard, C. L. Mellor, C. O. Jenista and L. E. Livingston.

Besly, Charles H. & Company, Chicago.—Abrasive discs and taps. Represented by R. E. Beimer.

Borden Company, Warren, O.—Pipe cutting and threading tools. Represented by V. M. Gaspor.

Boss Bolt & Nut Works, Chicago.—Rivets, bolts and nut locks. Represented by J. W. Fogg.

Bradford Corporation, New York.—Front end type throttle, back end connected throttle and draft gear. Represented by J. C. Keene, W. W. Fetner, A. C. Bodeau, Joe King, E. J. Barnett, R. W. Chambers and G. W. Bender.

Brewster, Morris B., Inc., Chicago.—Metallic packing and cylinder cocks. Represented by M. B. Brewster and John Ash.

Buckeye Steel Casting Company, Chicago.—Cast steel draft yoke, freight car couplers, truck side frames and truck bolsters. Represented by F. J. Coolidge.

Chicago Pneumatic Tool Company, New York.—Repairing outfit and bi-setting riveting hammer. Represented by E. Hemblly.

Clark Equipment Company, Buchanan, Mich.—High speed drills and reamers. Represented by C. O. Montague, H. S. Berry and C. E. Staninger.

Cleveland Pneumatic Tool Company, Cleveland, O.—Pneumatic drills and grinders, riveting and chipping hammers, pressure seated air valves and hose couplings. Represented by B. H. Tripp and C. J. Albert.

Cleveland Twist Drill Company, Cleveland, O.—High speed reamers and drills. Represented by W. L. Evans, I. P. Farnum and H. S. White.

Crucible Steel Company, Pittsburgh, Pa.—Steels. Represented by F. Baskerfield, R. R. Fletcher, J. H. Jones and A. F. Hines.

Dale Machinery Company, Nashville, Tenn.—Engine lathes. Represented by James Dale.

Dearborn Chemical Company, Chicago.—Water treatment, high grade oils and anti-rust and corrosive materials. Represented by J. D. Purcell, C. M. Hoffman, H. Rehmyer and Nelson Dunn.

Detroit Lubricator Company, Detroit, Mich.—Lubricators and flange oilers. Represented by A. G. Machesney, S. A. Witt and C. L. Butler.

Dickinson, Paul, Inc., Chicago.—Smoke jacks and ventilators. Represented by A. J. Filkins, C. W. Hansen and A. E. Engman.

Duff Manufacturing Company, Pittsburgh, Pa.—Lifting jacks. Represented by C. N. Thulin and E. E. Thulin.

Edna Brass Manufacturing Company, Cincinnati, O.—Force feed lubricators, hydrostatic lubricators, water columns, reflex gage, gage cock, injectors and boiler checks. Represented by H. A. Glenn, F. S. Wilcoxon.

Firth-Sterling Steel Company, McKeesport, Pa.—Raw materials used in manufacture of tool steel. Represented by C. O. Erick, C. E. Hughes and E. T. Jackman.

Forster Paint & Manufacturing Company, Winona, Mass.—Front end paint and locomotive cement. Represented by Helen J. Caswell.

Franklin Railway Supply Company, Inc., New York.—Locomotive booster, reverse gears and automatic wedge. Represented by J. L. Randolph, W. T. Lane, T. P. Wheland and H. E. Seifried.

Galena Signal Oil Company, Franklin, Pa.—Lubrication. Represented by W. F. Walsh, J. A. McNulty, J. E. Wilson and J. R. Graham.

Garlock Packing Company, Palmyra, N. Y.—Fibrous metal and sheet packing for locomotive shops and power plants. Represented by E. J. Hinkle, H. J. Ramshaw and C. W. Sullivan.

Goddard & Goddard Company, Inc., Detroit, Mich.—Milling cutters. Represented by C. H. Wallace and C. S. Goddard.

Graham-White Sander Corporation, Roanoke, Va.—Locomotive sander products complete, including the automatic sanding arrangement for booster engines. Represented by W. L. Robinson and W. H. White.

Hanna Stoker Company, Cincinnati, O.—Stokers. Represented by W. T. Hanna and G. D. Peverall.

Hauck Manufacturing Company, Brooklyn, N. Y.—Rivet forges, suction type portable torches, fuel oil tire heaters, low pressure oil burners, high pressure oil burners, forges and furnaces. Represented by W. C. Squire.

Hunt-Spiller Manufacturing Corporation, South Boston, Mass.—Locomotive wearing parts. Represented by V. W. Ellet, E. J. Fuller and C. L. Galloway.

Huron Manufacturing Company, Detroit, Mich.—Boiler washout plugs. Represented by H. N. Reynolds, E. C. Roddu and E. H. Willard.

Independent Pneumatic Tool Company, Chicago.—Pneumatic drills, hammers, rivet busters, electric drills and accessories. Represented by A. Anderson, I. Cruice, W. A. Nugent and H. E. Nelson.

Ingersoll Milling Machine Company, Rockford, Ill.—Heavy duty milling machine cutters. Represented by Amos A. Braid.

Ingersoll-Rand Company, New York.—Pneumatic tools. Represented by W. A. Johnson, L. W. Schnitzer, T. E. Forbes, W. F. Mitchell and R. W. Jamieson.

Jenkins Bros., New York.—Valves and packing. Represented by George Royal and C. B. Yardley.

Kempsmith Manufacturing Company, Milwaukee, Wis.—Milling machine attachments. Represented by A. C. Nieman.

Larco Wrench & Manufacturing Company.—Pipe and monkey wrenches. Represented by G. J. Duffy and W. R. Chase.

Lehman Machine Company, St. Louis, Mo.—Engine lathe. Represented by Paul Lehman and T. J. Bold.

Lehon Company, Chicago.—Roofing materials and waterproofing products. Represented by R. M. Chisson and J. E. Eipper.

Locomotive Firebox Company, Chicago.—Thermic siphon. Represented by A. A. Taylor, L. R. Pyle, John Baker and C. A. Seley.

Locomotive Stoker Company, Pittsburgh, Pa.—Stokers and coal pushers. Represented by John Ball, A. M. Willsie, Ernie Funk, W. Bartholomew, E. F. Millbank, Thomas Baldwin, V. B. Emerick and A. Whipple.

Madison-Kipp Corporation, Madison, Wis.—Mechanical lubricator. Represented by A. H. Flanagan and Frank Clark.

Manning, Maxwell & Moore, Inc., New York.—Portable air tools, Locomotive frame jaw grinder and arch tube cleaner. Represented by R. S. Dean, E. D. Garfield, L. E. Brayton, H. S. Smith, W. R. Gummere, C. L. Brown and C. W. Corning.

Metal & Thermit Corporation, New York.—Welded samples of locomotive frames. Represented by H. D. Kelly and W. H. Moore.

Miner, W. H., Inc., Chicago.—Draft gear. Represented by C. F. McCuen, B. S. Johnson, A. E. Biddle and R. H. Weber.

Mudge & Company, Chicago.—Locomotive spark arresters. Represented by F. H. DeBrun.

Nathan Manufacturing Company, New York.—Injectors, water columns, low water alarms, hydrostatic and mechanical lubricators. Represented by Richard Walsh, George Hatz and T. J. Murphy.

National Malleable & Steel Casting Company, Cleveland, O.—Couplers, draft gears and yokes and journal boxes. Represented by George Rasmussen and F. E. Moffett.

Norton, A. O., Inc., Boston, Mass.—Self-lowering locomotive and car jacks, 25 and 35-ton journal jacks. Represented by R. J. McKay, E. W. Hanegan and C. H. Smith, Jr.

Oakadee Company, Chicago.—Blow-off valve, front end hinge, water glass protector and tank hose couplers. Represented by A. G. Hollingshead, G. S. Turner, W. H. Heckman, J. S. Lemley, F. C. Kearney and C. R. Long, Jr.

Ohio Injector Company, Chicago.—Injectors, lubricators, automatic flange oilers, automatic graduating drifting valves, boiler checks, hose strainers and low water alarms. Represented by A. C. Beckwith and Wm. H. Malone.

Oxweld Railroad Service Company, Chicago.—Welding and cutting apparatus. Represented by A. N. Lucas, W. Leighton, W. A. Champieux, H. W. Schulze and W. A. Hogan.

Pilliod Company, New York.—Locomotive valve gear. Represented by J. H. Cooper and Frank Fisher.

Pilot Packing Company, Chicago.—Packing, decarbonizer and automatic steam drifting valve. Represented by Joseph Sinker.

Pratt & Whitney, Hartford, Conn.—Four-Groove twisted frame reamers, new design inserted blade cutter and toolroom lathe. Represented by W. R. Mullinix, F. Best and F. A. Armstrong.

Pyle National Company, Chicago.—Headlights, valve gears, flood lights, turbo-generators, combined train and headlight generators, train control generators and backup lamps. Represented by R. L. Kelker, R. S. Parsons, W. T. Bretherton and Fred Kersten.

Railway Journal, Chicago.—Railway magazine. Represented by A. E. Cook, J. A. Williams and S. Rosenthal.

Railway Age, Railway Mechanical Engineer, New York.—Railway books and magazines. Represented by R. V. Wright, E. L. Woodward and M. H. Learnard.

Railway Review, Chicago.—Railway magazines. Represented by L. R. Wolfe and J. A. Walsh.

Simonds Saw & Steel Company, Fitchburg, Mass.—Inserted tooth cold saws and hack saws and files. Represented by G. R. Bird.

Standard Stoker Company, Inc., New York.—Working model of locomotive stoker. Represented by H. S. Mann, C. S. Hanson and G. J. Rusch.

Sunbeam Electric Manufacturing Company, Evansville, Ind.—Headlight and turbo-generators. Represented by C. E. Kinnaw.

Superheater Company, New York.—Feed water heater, exhaust steam injector and repaired units. Represented by Bard Browne.

Symington Company, Rochester, N. Y.—Slack adjusters, draft gear models. Represented by C. R. Naylor and A. G. Brandenburg.

Thompson Electric Welding Company, Lawrence, Mass.—Electrically welded safe ends on superheater and boiler tubes and welded superheater units. Represented by F. H. Leslie.

Torchweld Equipment Company, Chicago.—Welding equipment. Represented by J. Jensen and J. Cameron.

Union Manufacturing Company, New Britain, Conn.—Chucks. Represented by I. E. Stevens.

United States Metallic Packing Company, Philadelphia, Pa.—Piston rod packing, force feed lubricators and sanders. Represented by J. T. Luscombe, D. C. Thomas, W. J. Schlacks and O. J. Rudolph.

Vissering, Harry & Co., Chicago.—Cross cut metallic packing, locomotive sanders and bell ringer. Represented by A. G. Hollingshead, G. S. Turner, W. H. Hickman, J. S. Lemley, F. C. Kearney and C. R. Long, Jr.

Westinghouse Air Brake Company, Wilmerding, Pa.—Air brake apparatus, draft gear, brake cylinder packing cups and gaskets, complete line of triple valve gaskets and latest type oil cup for air cylinders. Represented by J. R. Halton, E. H. Weaver and L. N. Carleton.

Worthington Pump & Machinery Corporation, New York.—Locomotive feed water heater. Represented by J. E. Buckingham, E. C. Jackson and J. M. Lammedee.

Traffic News

The Associated Traffic Clubs of America will hold its convention at the Brown Hotel, Louisville, Ky., on October 7 and 8.

A demonstration truck farm will be established in East Carroll parish, La., this fall by the Missouri Pacific. L. W. Baldwin, president, has made a proposition to the farmers that if they would plant 140 acres of vegetables in the parish, the railroad would plant 12 acres and would aid the farmers by finding the best available markets for their vegetables.

The Idaho Rate Association, Inc., has been organized at Boise, Idaho, for the purpose of making a study of freight rates in the interest of Idaho producers and shippers and to bring about an adjustment of discriminatory rates or service. The officers of the association are: President, J. L. Driscoll; vice-president, P. H. Morrow; and secretary-treasurer, S. M. Coffin.

"The Pine Tree Limited" is the name of a new passenger train to be put on between Portland and Boston by the Boston & Maine on September 28. The train will run through, 108 miles, with only one stop—Portsmouth, N. H.—in two hours, 40 minutes. It will leave Portland at 8 a. m., and leave Boston at 4:20 p. m. The eastbound train will have a dining car.

The "All-Florida Special" of the Seaboard Air Line, heretofore operated only in the winter, was put in service on September 7, two months earlier than in former years. This train, consisting wholly of Pullman cars, has sleeping cars from Boston, New York and Washington to the principal Florida resorts; and, beginning October 11, will provide similar accommodations to and from Cleveland, Buffalo and other central cities.

The Great Northern now carries I.c.I. freight from its city freight house in St. Paul to Minnesota Transfer in motor trucks and it is there loaded direct to destination. Heretofore, this movement has been by freight cars which were loaded solid at the freight house, necessitating the transfer of practically everything at Minnesota Transfer. The new arrangement is expected to save as much as 24 hours on most of the freight.

Employees of the two principal baggage transfer companies in New York City who struck on August 25 and paralyzed their employers' business at the rush season, returned to work on September 16, following mediation by the New York State Labor Bureau. The strikers get an increase in pay of one dollar a week. They say that the virtual failure of their strike is due to the fact that the last day of August, the first day of school and Labor Day were this year spread over a period of fourteen days, thus lessening the usual congestion at railroad stations.

The Lehigh Valley announces the opening of two new "inland" freight stations in Manhattan, New York City; one at 48 Beach street and the other at 463 Washington street. These stations are situated back a short distance from the North river front, on which the company's piers are located; and freight, both inbound and outbound, will be carried by auto trucks between the new stations and the Lehigh Valley terminal at Jersey City. This movement of freight across the river by ferryboat will be an addition to the regular movement, by freight cars on floats, which is not diminished.

The Southern reports having taken 7,538 carloads of Georgia peaches to markets in other states this year and 136 cars to points in Georgia, making the Southern's total movement 7,674 cars. This compares with 6,014 cars in 1924 and 5,700 cars in 1923. All of the 7,538 cars moved to distant markets reached destination on time. From Atlanta 133 special peach trains were run to Potomac Yards and 127 to Cincinnati. From Greenville, S. C., 13 special trains were run to Potomac Yards, handling 344 cars from Northeast Georgia. From Chattanooga 422 cars were moved to Cincinnati; from Macon 37 cars to Florida, and from Augusta seven cars to the East.

At a meeting of the Southwest Shippers' Advisory Board at Oklahoma City, Okla., on September 4, J. L. West, chairman,

estimated that Oklahoma's cotton crop for 1925 would be 1,500,000 bales; Texas 4,500,000 bales; Arkansas 1,500,000 bales; and Louisiana 500,000 bales. The coal committee predicted that shipments during the coming fall from Oklahoma and Arkansas will show a 10 to 15 per cent increase; those from New Mexico and Colorado 5 to 10 per cent increase and those from the lignite fields of Texas 20 to 30 per cent increase over last year's figures. Little Rock, Ark., was chosen as the next meeting place of the board, a special session being set for December.

The Southeastern Shippers' Regional Advisory Board held its regular quarterly meeting at Atlanta, Ga., on September 8 with an attendance of about 250, including not only railroad men and shippers but also numbers of bankers and representatives of chambers of commerce. In every industry the outlook for business was reported as brighter than at the beginning of the year; and the demand for freight cars within the next three months is expected to be greater than in any quarter for several years. The railroads gave equally encouraging reports. All of them had loaded more cars during the past three months than in any quarter for five years. The presiding officer was M. M. Caskie, vice-chairman of the board. W. C. Kendall (A. R. A.) reported on the railroad freight business of the past quarter.

Coal Rates to New England

A formal protest against the new rates on bituminous coal from mines on the Chesapeake & Ohio, Norfolk & Western and Virginian to New England and Trunk Line points, prescribed by the Interstate Commerce Commission in its order of July 22 following its investigation of anthracite rates, has been filed with the commission by the Pennsylvania; the Baltimore & Ohio; the Long Island; the New York, New Haven & Hartford; the Delaware & Hudson; the Boston & Maine, and the Reading, asking a modification of the order to avoid certain fourth section departures and to eliminate destinations south of New England. The roads have not asked for a rehearing or reargument but wish to reserve the right to do so later. The rates were established for the purpose of creating a market for substitutes for anthracite coal but the roads assert that there is no necessity for their establishment to destinations south of New England. However, if this modification should not be allowed by the commission the rate to Baltimore and adjacent destinations should be somewhat higher than that required.

The commission on September 12 took action on the foregoing request. It modified its order of July 22 to meet some of the points made regarding fourth section departures but made no change in the destinations to which the rates prescribed should apply. Also the order was amended so as to permit the rates published to become effective on or before October 15 on 10 days' notice instead of 30 days' notice.

Short-Type Refrigerator Car Satisfactory

The so-called "short" refrigerator car, which is about three feet shorter than the United States standard refrigerator car, will satisfactorily refrigerate 315 crates of celery. This was demonstrated in tests conducted by the United States Department of Agriculture, in co-operation with growers and receivers of celery, and railroads and refrigerator-car lines, according to an announcement by the department. Celery was used in the test shipments for the reason that complaints against the short car came largely from shippers of that crop and also because it is difficult to refrigerate. The chief grievance was against the minimum-load requirement of 350 crates of 50 lb. each, the contention of the shippers being that such a load can not be satisfactorily refrigerated in the short-type cars. In each of the three shipments the investigators used four "short" cars of the same general characteristics, taken directly out of road service. In preparing them for the tests the ordinary commercial practices were followed. The celery was graded, packed, and loaded immediately after digging.

All test shipments were sent from Florida to northern points several hundred miles distant. The celery carried in cars loaded with 294 or 315 crates showed but little deterioration in quality upon arrival at its destination, whereas in cars with larger loads the deterioration was serious.

Detailed information concerning these tests is contained in Department Bulletin 1353, entitled "The Efficiency of a Short-Type Refrigerator Car," which may be obtained free.

Foreign Railway News

Malay Railways in 1924

The Federated Malay States Railways in 1924 earned \$3,278,424 over operating expenses, representing a return of 1.67 per cent on the capital investment. In 1923 net was \$1,710,349 or 0.89 per cent on the investment. Meantime gross earnings have been showing improvement, due to heavier freight traffic. Passenger revenue is declining somewhat due to decreased rates, although the volume of traffic itself shows an upward tendency.

Electrification of Austrian Railways

Preliminary plans for the electrification of the Austrian Federal Railway lines from Salsburg to Woergl and from Kufstein to Brenner are well under way, according to the published report of the electrification bureau of the railways, says Commerce Reports. These are the projects for which the League of Nations released a portion of the foreign credits a month ago, and several large orders have already been placed. The Austrian Siemens-Schuckert-Werke have received an order for the construction and equipment of the substation at Feldkirch, and the construction of transmission lines from Ruetzwerk has been awarded to the A. E. G. Union and the Oesterreichische Bergmann-Elektrizitaets-gesellschaft. This latter concern is also constructing the cable from Bludenz to Feldkirch.

Seven fast mountain passenger locomotives have already been shipped and are in operation between Innsbruck and Bludenz. In addition, 20 passenger locomotives have been ordered, of which 19 are already furnished; 12 of these are in use along the Attnang-Steinach line, and 5 on the line from Innsbruck to Bludenz. Furthermore, 20 freight locomotives have been furnished and are in operation, and 4 fast freight locomotives for use in the valley are under construction.

The total expenditure on this scheme during the second quarter of 1925 amounted to 8,525,000 schillings, of which 5,905,000 schillings were devoted to new constructions and the remaining 2,621,000 schillings to the purchase of rolling stock. (The schilling exchanges at 14.1 cents.)

Brazilian Commission Going to Europe to Buy Railway Supplies

During the war and since the maintenance of permanent way, rolling stock, and equipment generally of all, or nearly all, the Brazilian railways has suffered greatly, says the Times (London) Trade Supplement. In consequence of this and of slow progress in new construction, the transport services so necessary to the country have become increasingly insufficient, and, indeed, constitute one of the country's major problems at the present time. In many states great development in motor road construction has taken place, but it is recognized that the railways must develop correspondingly.

A commission is being sent to Europe by the Ministry of Transport empowered to negotiate for large supplies of railway material. It consists of Dr. Alberto Biolchini, Director da Contabilidade of the Ministerio da Viação (Transport Ministry); Dr. Augusto Menezes, also on the finance side and attached to the Minister; and Dr. Luis Caracas, who is understood to be the technical man of the party, and was formerly connected with the Central Railway of Brazil. The Brazilian railways have 18,820 miles in operation—about three-fourths being property or concessions of the federal government and the remainder property or concessions of the States. There are 5,317 miles under the direct administration of the federal government.

There are numberless schemes for new railways and many projects for extensions have been officially approved or submitted for approval. Actual construction is proceeding slowly at present because of measures of economy, but provision is made for railway equipment and extension by means of a 10 per cent traffic tax in force on the government railways, the proceeds of the tax being earmarked for this purpose.

Equipment and Supplies

Locomotives

THE NEW YORK, NEW HAVEN & HARTFORD has contracts under negotiation for the purchase of 10 Mountain type freight locomotives to be equipped with McClellan boilers.

Freight Cars

THE ST. LOUIS-SAN FRANCISCO is inquiring for 3,000 box cars.

THE MATHIESON ALKALI COMPANY is inquiring for 68 quarry cars.

THE ST. LOUIS-SAN FRANCISCO is inquiring for 3,000 single sheathed box cars of 50 tons' capacity.

THE HAYNESWORTH MINING & TRANSPORTATION COMPANY has ordered 6 steel hopper cars of 50 tons' capacity from the American Car & Foundry Company.

THE BALTIMORE & OHIO has ordered 1,000 hopper car bodies from the Standard Steel Car Company. Inquiry for this equipment was noted in the *Railway Age* of September 12.

THE ILLINOIS TRACTION COMPANY has ordered 50 hopper cars from the Mt. Vernon Car Manufacturing Company. This order is in addition to that reported in the *Railway Age* of May 16.

THE NEW YORK CENTRAL has ordered 500, 70-ton hopper cars, from the Pressed Steel Car Company and 500 from the Standard Steel Car Company for service on the Pittsburgh & Lake Erie. Inquiry for this equipment was reported in the *Railway Age* of August 29. Orders have also been placed for 1,000 refrigerator cars with the Merchants Dispatch Transportation Company; five hundred of these cars will be assigned to the New York Central and 500 to the Cleveland, Cincinnati, Chicago & St. Louis.

Passenger Cars

THE SOUTHERN has ordered 10 horse express cars from the Bethlehem Shipbuilding Corporation. Inquiry for this equipment was reported in the *Railway Age* of August 15.

THE GEORGIA, FLORIDA & ALABAMA has ordered 2 combination baggage and express cars, 3 mail and express cars and 3 coaches from the Bethlehem Shipbuilding Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 12.

THE NEW YORK, NEW HAVEN & HARTFORD has contracts under negotiation for the purchase of 5 gas-electric cars and 20 steel underframes for baggage and express cars. This is in addition to 35 multiple unit cars, inquiry for which was reported in the *Railway Age* of August 8.

Iron and Steel

THE LOUISVILLE & NASHVILLE is inquiring for 350 tons of structural steel.

THE ERIE has ordered 300 tons of structural steel from the American Bridge Company.

THE WHEELING & LAKE ERIE has ordered 250 tons of tie plates from the Illinois Steel Company.

THE GRAND TRUNK WESTERN has ordered 180 tons of structural steel from the Massillon Bridge & Structural Company.

THE DELAWARE, LACKAWANNA & WESTERN has ordered 200 tons of structural steel from the American Bridge Company.

THE AKRON, CANTON & YOUNGSTOWN has ordered 400 tons of rail and 200 tons of angle bars from the Carnegie Steel Company.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered four 80,000 barrel oil storage tanks requiring 1,000 tons of steel for use at Eldorado, Kan., from the Chicago Bridge & Iron Works.

Machinery and Tools

THE GREAT NORTHERN is inquiring for the following equipment:

- 1 35-ton, all steel, combination locomotive crane and ditcher equipped with 50-ft. crane boom and 40-ft. ditching boom.
- 1 35-ton, all steel, combination locomotive crane and pile driver complete with 50-ft. crane boom rigged for clam shell work, and 5,000 lb. drop hammer.
- 1 all steel, air operated earth spreader with ditching attachment, equipped on both sides with composite wings to spread not less than 22 ft. from center of track.
- 1 gasoline shovel, caterpillar mounted, with 1½ cu. yd. dipper, dumping radius of about 26 ft., dumping height about 15 ft.
- 1 steam shovel 1½ cu. yard. capacity, with dipper for gravel and sand digging, caterpillar mounted, dumping radius about 26 ft., and dumping height about 15 ft.
- 1 steam shovel 1¾ or 2 cu. yd. capacity, with dipper, caterpillar mounted, dumping radius about 30 ft., and dumping height about 18 ft.

Miscellaneous

THE READING has ordered two double-screw ferry boats from the Bethlehem Shipbuilding Corporation. These boats will have a length of 198 ft. between stems, a beam of 36 ft. and a depth of 16 ft.

Signaling

THE JACKSONVILLE TERMINAL COMPANY (Jacksonville, Fla.) has ordered from the Union Switch & Signal Company material for adding 16 switches and 20 electro-pneumatic dwarf signals to its present interlocking plants. Additions will be made to the electro-pneumatic interlocking at Myrtle avenue, and to the electro-mechanical machine at Lee street; and provision will be made for traffic locking on four tracks between these two stations.

Pennsylvania Gives Extensive

Automatic Train Control Order

The Pennsylvania Railroad has given to the Union Switch & Signal Company a contract for automatic train control, the Union continuous induction system providing for the installation of the system on over 1,000 miles of road. Locomotives to the number of 1,000 will be equipped. This proposed work, complying with the Interstate Commerce Commission's general policy, will cost from six to seven millions of dollars.

FREIGHT CAR REPAIR SITUATION

1924	Number freight cars on line	Cars awaiting repairs			Per cent of cars awaiting repairs	Month	Cars repaired		
		Heavy	Light	Total			Heavy	Light	Total
January 1.....	2,279,363	118,653	39,522	158,175	6.9	December	87,758	2,073,280	2,161,038
April 1.....	2,274,750	125,932	46,815	172,747	7.6	March	77,365	2,213,158	2,290,523
July 1.....	2,279,826	144,912	49,957	194,869	8.5	June	70,480	1,888,899	1,959,379
October 1.....	2,304,020	157,455	48,589	206,044	8.9	September	74,295	1,372,277	1,446,572
January 1, 1925.....	2,293,487	143,962	47,017	190,979	8.3	December	66,615	1,288,635	1,355,250
February 1.....	2,305,520	139,056	47,483	186,539	8.1	January, 1925.....	69,084	1,358,308	1,427,392
March 1.....	2,313,092	141,192	43,855	185,047	8.0	February	66,283	1,313,088	1,379,371
April 1.....	2,315,732	143,329	43,088	186,417	8.1	March	71,072	1,348,078	1,419,150
May 1.....	2,316,561	144,047	45,467	189,514	8.2	April	69,631	1,290,943	1,360,574
June 1.....	2,320,261	146,998	48,988	195,986	8.4	May	65,651	1,276,826	1,342,477
July 1.....	2,326,734	150,530	47,938	198,468	8.5	June	71,789	1,296,558	1,368,347
August 1.....	2,335,223	153,674	43,607	197,281	8.4	July	70,087	1,330,595	1,401,682

Data from Car Service Division Reports.

Supply Trade News

Carl S. Jordan, who has been serving as assistant to the manager of railroad sales of the **Wyoming Shovel Works**, has been transferred to San Francisco, Cal., where he will have charge of the California territory as district sales manager. He will be succeeded by **M. S. Hendrickson**, who will be located at the Chicago office of the Wyoming Shovel Works.

L. M. Zimmer has been appointed general sales manager of the **Linde Air Products Company**, manufacturers of oxygen, and of the welding gas division of the **Prest-O-Lite Company, Inc.**, manufacturers of dissolved acetylene, succeeding **L. M. Moyer**, resigned. Mr. Zimmer entered the employ of the Linde Company nine years ago as junior salesman. Most of the time he has been in the Central West, coming to New York early in 1924 to act as assistant general sales manager.

Control of the **Hall-Scott Engine Company**, Oakland, Calif., manufacturers of motors for the **Fageol Motors Company**, has been acquired by the **American Car & Foundry Company**. The **J. G. Brill Company** is associated with the American Car & Foundry Company in this purchase. Reports are current that control of the Brill Company is about to pass to new interests. One rumor is to the effect that there is in contemplation the formation of a new company to be controlled by the American Car & Foundry Company or interests associated with the latter. The new company, it is said, will take over control of the Brill Company, the Hall-Scott Engine Company and the Fageol Motors Company, of Ohio. The American Car & Foundry Company has issued the following statement denying these rumors:

Following the announcement that American Car & Foundry Company had purchased a controlling interest in the Hall-Scott Motor Car Company of Berkeley, Cal., it was persistently rumored that it had also acquired certain companies to whom Hall-Scott Company had been supplying gas engines for use in motor trucks, buses, etc. Fageol Motor Company of California, Fageol Motor Company of Ohio and the J. G. Brill Company were mentioned as having been thus acquired. American Car & Foundry Company denies that it has purchased control of these or any other customers of the Hall-Scott Company, and states that the rumors are unfounded.

John T. Llewellyn, vice-president of the Chicago Malleable Castings Company and president of the Allied Steel Castings Company, Chicago, has been elected president of the Chicago Malleable Castings Company, to succeed **Silas J. Llewellyn**, deceased. **James S. Llewellyn**, secretary of the Chicago Malleable Castings Company, and secretary and works manager of the Allied Steel Castings Company, has been elected vice-president, general manager and secretary of the Chicago Malleable Castings Company, and vice-president, general manager and secretary of the Allied Steel Castings Company. **Paul Llewellyn**, treasurer of the Chicago Malleable Castings Company and vice-president of the Interstate Iron & Steel Company, has been elected vice-president and treasurer of the Chicago Malleable Castings Company.

John T. Llewellyn was born in Briton Ferry, Wales, and came to America in 1864. He was educated in the public schools of Cleveland, Ohio, and Chicago, and in 1880 he entered the employ of the Illinois Steel Company as a telephone operator. In 1896 he organized the Valve Setting Company, Racine, Wis., and in 1898 he organized the Chicago Malleable Castings Company, of which he has since been vice-president and general manager. **James S. Llewellyn** was born in 1887 in Milwaukee and was graduated from the University of Michigan in 1908. After leaving school he entered the employ of the Chicago Malleable Castings Company and worked in the shops, occupying several positions until 1915 when he was appointed secretary, which position he has held until his recent promotion. **Paul Llewellyn** was born in 1886 and was educated at Yale University. In 1908 he entered the employ of the Interstate Iron & Steel Company, since which he has been manager of the East Chicago works, sales manager, vice-president of the latter company and treasurer of the Chicago Malleable Castings Company.

Obituary

Edwin H. Baker, who retired as second vice-president of the Galena Signal Oil Company in 1916 after having been engaged for 43 years in the manufacture and supply of lubricating oils, died in Brooklyn on September 15. In 1873 Mr. Baker entered the employ of S. T. Baker & Company, New York, a concern manufacturing lubricating oils which had been founded by his father in 1849. S. T. Baker & Company was later incorporated and became a department of the Galena Company and in 1894 Mr. Baker entered the service of the latter company continuing at the same time as president of S. T. Baker & Company. In 1912 the Baker Company was consolidated with the Galena and Mr. Baker became second vice-president of the Galena Signal Oil Company. He continued in this capacity until the time of his retirement in 1916.

Silas J. Llewellyn, president of the Interstate Iron & Steel Co., whose death was reported in the *Railway Age* of September 5, was born in Briton Ferry, Wales, on October 25, 1860,

and came to America in 1864 with his parents. He was educated in the public schools of Milwaukee, Wis., and in 1879 entered the employ of the North Chicago Rolling Mill Company at Milwaukee, continuing with its successor, the Illinois Steel Company, until 1897. In that year he became vice-president of the Inland Iron & Forge Company, which was merged in 1899 into the Republic Iron & Steel Company, of which he was secretary and a member of the executive committee. In 1900 he was elected

vice-president of the Plano Manufacturing Company, Plano, Ill., which was later merged into the International Harvester Company. In 1905 he formed the Interstate Iron & Steel Co., of which he has since been president. He is also president of the Chicago Malleable Castings Company.

William H. Heulings, Jr., vice-president and general manager of sales of the J. G. Brill Company, Philadelphia, died on September 14 in the Jefferson Hospital, that city, after a

brief illness. Mr. Heulings has been identified with the Brill Company since boyhood, starting in February, 1885, as a stenographer. He was transferred to the sales branch of the business at the age of twenty and became assistant secretary of the company in 1901, and in 1903, assumed in addition the duties of general manager of sales. In June, 1914, he was elected vice-president and held this joint responsibility at the time of his death. Mr. Heulings was born on November 17, 1869, in Philadelphia, and received his education in

the public schools of this city. He was also vice-president and a director of the American Car Company, St. Louis, Mo., and a director of both the G. C. Kuhlman Car Company, Cleveland, and the Wason Manufacturing Company, Springfield, Mass., subsidiaries of the J. G. Brill Company.



S. J. Llewellyn



W. H. Heulings, Jr.

Railway Construction

ALABAMA, TENNESSEE & NORTHERN.—The company has filed a petition with the Interstate Commerce Commission asking permission to construct an extension of its line from its present northern terminus, Reform, Ala., connecting with and crossing the St. Louis-San Francisco at Bazemore or Glen Allen, Ala., to Haleyville, Ala., where it would connect with the Illinois Central and the Northern of Alabama. The distance from Reform to the Frisco would be 52 miles, and 26 miles further to the Illinois Central. The Alabama, Tennessee & Northern now operates about 200 miles of line. The extension when built, it is claimed, would provide, with present mileage, the shortest north and south line from the coal fields west of Jasper, Ala., to the gulf at Mobile, and would give the Illinois Central and Frisco, which do not now reach the port of Mobile, direct connection with it. The petition states that the company is in position to finance and promptly build this additional mileage.

ATLANTIC COAST LINE.—The Interstate Commerce Commission has authorized this company to construct an extension southward from its southern terminus at Immokalee, Fla., to Deep Lake, a distance of approximately 27 miles; estimated construction cost, \$620,347. The work must be commenced by January 1 and completed during 1926.

BALTIMORE & OHIO.—A contract has been awarded to the B. F. Johnston Company, Baltimore, Md., for grading the Snyder avenue yard at Philadelphia, Pa., and for laying a concrete base for tracks across streets. The cost is estimated at \$26,000.

BALTIMORE & OHIO.—A contract has been awarded to the Empire Engineering Company, Baltimore, Md., for the reconstruction and extension of the arch of a bridge over Big Walnut creek, Big Walnut, Ohio. The work will cost approximately \$100,000.

FLORIDA EAST COAST.—This company has awarded a contract to Reid & Lowe, Birmingham, Ala., for the construction of a steel bridge with a concrete substructure over Moultrie creek.

JEFFERSON & NORTHWESTERN.—The nine-mile extension from Marietta, Tex., which has been authorized by the Interstate Commerce Commission, as reported in the *Railway Age* of August 22, will be constructed by company forces at a cost estimated at \$75,000.

PENNSYLVANIA.—This company has awarded a contract for the construction of its new West Philadelphia, Pa., office building to Irwin & Leighton, Philadelphia. The building will have a frontage of 150 ft. and a depth of 250 ft. Construction will be of steel, with brick walls and stone and terra cotta trimmings. Fourteen electrically operated passenger elevators will be installed. Over 5,000 employees of the railroad will occupy the structure. This project was reported in the *Railway Age* of August 22.

SOUTHERN.—The line between Richmond, Va., and Danville is to be improved by the immediate construction of three new bridges to take the place of lighter structures which have been in service since the late 'eighties. Near Clover a new bridge is to be built across Piney Creek. A new center pier will be erected on pile foundation, two bank abutments will be placed, and two deck plate girder spans, each 60 ft. long, installed to take the place of the present 50 ft. bridge. A new through truss span, 155 ft. 6 in. long, will be installed to take the place of the existing bridge over the Little Roanoke river near Saxe. A new bridge across the Appomattox river near Mattox will be built, the work to be done consisting of jacketing the existing stone center pier with reinforced concrete, reinforcing the present stem walls and abutments and installing two new 100 ft. deck girder spans to take the place of the present spans. The bridge spans will be fabricated by the Virginia Bridge & Iron Company. Falsework and masonry changes will be done by railway forces.

SOUTHERN PACIFIC.—Plans are being prepared for the construction of a terminal at Klamath Falls, Ore.

Railway Financial News

CENTRAL OF GEORGIA.—Bonds.—The Interstate Commerce Commission has authorized this company to pledge and repledge, from time to time, until June 30, 1927, \$3,314,500 of refunding and general mortgage 5½ per cent bonds, Series B, as collateral security for short term notes.

CHESAPEAKE & OHIO.—Acquisition.—The Interstate Commerce Commission has approved the acquisition by the Chesapeake & Ohio of the Laurel Fork, extending from Seth, Boone County, W. Va., to Prenter, 10.05 miles, which the Chesapeake & Ohio has made arrangements to purchase for \$270,000 from the Federal Coal Company, owner, Coal River Collieries Company, lessee. The Collieries Company is owned largely by members of the Brotherhood of Locomotive Engineers to whom its securities were sold by the Brotherhood Investment Company. The commission last January (see *Railway Age* of January 24, 1925, page 265) refused permission to the Coal River & Eastern, organized in the interest of the Coal River Collieries Company to operate this line. It said that the Chesapeake & Ohio should furnish the service and held the case open in order that further negotiations might be had between the C. & O. and the shippers relative to the giving of the service by the C. & O.

CHICAGO, MILWAUKEE & ST. PAUL.—French Committee Approves Reorganization Plan.—The French committee, representing holders of the 1910 European loan, has approved the reorganization plan, and holders of the securities have been advised to deposit their bonds. About \$11,000,000 of the loan is held in France.

The time limit for deposit of securities under the reorganization plan expired on September 15.

Roosevelt & Son Committee Will Suggest New Rate Plan.—Following a meeting on September 16 of the New York committee of the security holders of the northwestern roads organized by Roosevelt & Son, a statement was issued saying that the committee would outline a supplemental plan intended to enable the northwestern roads to obtain special relief in addition to the 5 per cent freight rate increase asked for by all of the western carriers. The statement said:

"The proposed supplemental plan would require the co-operation of at least the major carriers in the Northwestern region, and steps taken to secure such co-operation have been successful to a considerable extent. While it may be hard to get the executives of that region to unite on a higher rate schedule, it is clear that unless they unite no special relief is likely. The executives are more likely to unite if the security holders plainly show their wish that they do so.

"Work is progressing on the framing of such a plan and we have good hopes that, if it is supported by the executives of the interested carriers, it will commend itself to the Interstate Commerce Commission, in view of the demonstrated needs of the Northwestern roads for special relief.

"The result of the adoption of the proposed plan would be to equalize the rates of the Northwestern region with the rates of the other regions in the Western district and to produce earnings nullifying any argument for resort to pooling. We found that the Potter plan was almost unanimously disapproved by the other Western roads. We have declared our opposition to the Potter plan (1) because it is unsound in principle, (2) because it is of doubtful legality and (3) because the plan is impracticable."

Say Reorganization Plan Is Assured.—Kuhn, Loeb & Co., and the National City Company, reorganization managers, announced on Wednesday that at the close of business on September 15 more than \$167,000,000 par value of securities had been deposited, about \$97,000,000 of which were bonds. This indicates deposits of about 37 per cent of the securities outstanding, and more than 42 per cent of the bonds.

These deposits, the bankers said, assure the consummation of the reorganization plan. The announcement did not set a date as the final time limit for depositing securities, it being said merely that "the depositaries have been instructed to accept deposits for the present without penalty."

The bonds on record in favor of a reorganization, it was said, represent 68 per cent of the outstanding Puget Sound first mortgage bonds and about 40 per cent of the other bonds and debentures affected by the reorganization plan. The statement continued:

"In order to remove any misunderstanding which may exist on the part of security holders, the reorganization managers state that they are, of course, in sympathy with efforts on behalf of the security holders of the Chicago, Milwaukee & St. Paul and other northwestern carriers to obtain adequate rates, and that doubtless a considerable amount of the securities

already deposited under the plan also are included in those spoken for by the various committees formed for that purpose. The reorganization managers and the bondholders' and stockholders' committees are convinced, however, that delay in the reorganization pending the determination of the rate question is not in the interest of security holders."

DELAWARE & HUDSON.—B. R. & P. Stockholders Approve Lease.—Stockholders of the Buffalo, Rochester & Pittsburgh, meeting on September 15, approved the lease of their property to the Delaware & Hudson.

ERIE & PITTSBURGH.—Bonds.—The Interstate Commerce Commission has authorized the issue of \$183,945 debenture 3½ per cent bonds pursuant to an agreement dated November 1, 1905, to be delivered to the Pennsylvania Railroad Company in payment for advances. The Pennsylvania, as lessee has been authorized to assume obligation relative to the bonds.

KANSAS CITY, MEXICO & ORIENT.—Sale Protested.—Formal notice of the appeal from the approval of the sale and reorganization plan of the Kansas City, New Mexico & Orient has been filed in the Federal District Court in Kansas City, Kan. Elliott H. Jones, an attorney representing the American Locomotive Company, the American Car & Foundry Company, a Memphis bank and other concerns, all of which hold some \$360,000 in Orient notes, said he had filed the notice in Judge John C. Pollock's court. On March 24, Judge Pollock issued an order confirming the sale of the railroad to Clifford Histed and others of Kansas City and approving a reorganization plan.

MAINE CENTRAL.—Abandonment of Hereford Railway.—The Maine Central has given notice that its lease of the Hereford Railway has been cancelled, effective November 1, 1925. The Hereford operates 53 miles of line extending from the Vermont-Canada boundary near Beecher Falls, Vt., to Lime Ridge, Quebec. It was leased by the Maine Central for 999 years from May 1, 1890, and last May authority was granted by the Interstate Commerce Commission for the lessee company to purchase the capital stock of the lessor company so as to enable it to modify or abrogate the lease. The commission also permitted the abandonment, effective after six months, of 0.67 miles of the Hereford, this being the only part lying within the United States and, therefore, the only part over which the commission had abandonment jurisdiction.

NATIONAL COAL RAILWAY.—Securities.—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$350,000 of capital stock and \$150,000 of bonds for the purpose of completing the construction of its line.

NEW YORK, CHICAGO & ST. LOUIS.—Unification Hearing.—The hearing on the unification application, which was resumed on September 8, was continued until September 14, and then adjourned to be resumed on September 16. A week was consumed in a detailed cross-examination of H. C. Royal, an accountant, by counsel for the Chesapeake & Ohio minority stockholders, and on September 16, when the hearing was resumed again, he began cross-examination of G. W. Burpee, of Coverdale & Colpitts, who had introduced statistical exhibits at a previous hearing. The hearing has been held before Director Mahaffie, of the Bureau of Finance of the commission. It is expected that when cross-examination of the Nickel Plate witnesses is completed the protestants will have some testimony of their own to present.

NORTHERN PACIFIC.—Abandonment.—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of 12.91 miles of the Red Mountain branch, which extends from Rimini Junction (Helena) to Rimini, a total distance of 15.76 miles. The commission has also issued a certificate authorizing the abandonment of the Marysville branch extending from Clough Junction, Mont., to Marysville, 12.57 miles. Permission to abandon these branches was refused in April, 1924, but it was then suggested by the commission that if increased traffic did not materialize within a year, the applications might be renewed.

PENNSYLVANIA & ATLANTIC.—Abandonment.—This company, leased until January 1, 1923, by the Pennsylvania, which still owns most of its stock, has been authorized by the Interstate Commerce Commission to abandon its branch to Browns Mills, N. J., 1.82 miles.

SALINA NORTHERN.—Tentative Valuation.—The Interstate Commerce Commission has served a tentative valuation report as of

June 30, 1919, in which the final value for rate-making purposes is placed at \$1,311,630 for the property owned and \$1,312,478 for that used.

SEABOARD AIR LINE.—Bonds Sold.—Dillon, Read & Co., Ladenburg, Thalmann & Co. and Kissel, Kinnicut & Co. have sold \$10,000,000 first and consolidated mortgage 6 per cent bonds, series A, due September 1, 1945, at 94¾ and interest to yield 6.74 per cent. The first and consolidated bonds are a direct obligation of the Seaboard Air Line Railway and are secured by direct first mortgage lien on approximately 442 miles of railroad including the main line of 258 miles from Hamlet, N. C. to Savannah via Charleston. They are further secured by a pledge of securities, including \$48,879,000 refunding mortgage bonds out of a total of \$68,229,000 issued.

Application to I. C. C.—The Seaboard Air Line and the Seaboard-All Florida, the Florida, Western & Northern and the East & West Coast have applied to the Interstate Commerce Commission for authority to issue jointly \$26,000,000 of first mortgage 6 per cent bonds of the Seaboard-All Florida, to be guaranteed by the Seaboard Air Line and the proceeds to be used in the construction of new lines in Florida. Of the bonds \$25,000,000 have been sold at 94½ to Dillon, Read & Co., and Ladenburg, Thalmann & Co., and \$1,000,000 are to be held subject to further order of the commission. These bonds were sold to the public in August.

Acquisition.—The Seaboard has applied to the Interstate Commerce Commission for authority to acquire control by acquisition of stock and by lease of the Seaboard-All Florida and by lease of the Florida Western & Northern and the East & West Coast. The Seaboard-All Florida, recently organized for the purpose of constructing new lines in Florida, is to lease the two other companies now operated by the Seaboard and transfer the leases to the Seaboard, which will also acquire all the stock of the All Florida.

SOUTHERN.—Regular Dividend.—Directors, at the meeting on September 10, declared the regular quarterly dividend of 1¼ per cent on the common stock. There was expectation in many quarters that the rate might be increased to 1¾ per cent quarterly.

ST. LOUIS SOUTHWESTERN.—Acquisition.—The Interstate Commerce Commission has approved extension of a lease of the Stephenville North & South Texas, made in 1923, for an additional two years, with an option at the end of that period to extend the lease for a period not to exceed 36 years.

WHEELING & LAKE ERIE.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to sell at not less than 85 or to pledge as collateral for short term notes \$1,650,000 of 5 per cent refunding mortgage bonds, the proceeds to be used to pay on October 1 two notes to the United States government amounting to \$1,400,000.

Dividends Declared

Alabama & Vicksburg.—3 per cent, payable October 1 to holders of record September 15.
Cleveland, Cincinnati, Chicago & St. Louis.—Common, 1¼ per cent, quarterly; preferred, 1¼ per cent, quarterly, both payable October 20 to holders of record September 25.
Joliet & Chicago.—\$1.75, quarterly, payable October 5 to holders of record September 25.
New York Central.—1¼ per cent, quarterly, payable November 2 to holders of record September 25.
Philadelphia & Trenton.—2½ per cent, quarterly, payable October 10 to holders of record October 1.
Philadelphia & Western.—Preferred, 1¼ per cent, quarterly, payable October 15 to holders of record September 30.
Southern.—Common, 1¼ per cent, quarterly, payable November 2 to holders of record September 22. Preferred, 1¼ per cent, quarterly, payable October 15 to holders of record September 22.
United New Jersey R. R. & Canal Companies.—2½ per cent, quarterly, payable October 10 to holders of record September 20.
West Jersey & Seashore.—2½ per cent, semi-annually, payable October 15 to holders of record October 1.
Western Pacific R. R. Corp.—Preferred, 1½ per cent, quarterly, payable October 20 to holders of record October 8.

Trend of Railway Stock and Bond Prices

	Sept. 15	Last Week	Last Year
Average price of 20 representative railway stocks	87.25	86.73	70.45
Average price of 20 representative railway bonds	91.60	91.18	87.86

Railway Officers

Executive

L. B. Burns, general superintendent of the Seaboard Air Line, with headquarters at Tampa, Fla., has been appointed assistant to the vice-president in charge of operations, with headquarters at Norfolk, Va.

Operating

E. C. Bagwell, general superintendent of the Seaboard Air Line, with headquarters at Jacksonville, Fla., has been appointed to a similar position on the Tampa & Gulf Coast, with the same headquarters.

W. H. Farrell, general manager of the Algoma Eastern, having resigned, the position is abolished. The duties heretofore performed by the general manager will be assumed by **G. A. Montgomery**, president. **F. M. Donegan** has been appointed superintendent, with headquarters at Sudbury, Ont.

A. H. Gass, assistant to the manager of the public relations section of the car service division of the American Railway Association at Washington, D. C., has been appointed resident car service agent of the car service division at Denver, Colo.

T. J. Weaver has been appointed terminal trainmaster, in charge of the Atlanta terminals of the Seaboard Air Line, with headquarters at Atlanta, Ga. **J. White** has been appointed assistant trainmaster of the Georgia division, with headquarters at Abbeville, S. C.

G. R. Carlton, division superintendent of the Seaboard Air Line, with headquarters at Atlanta, Ga., has been appointed general superintendent of the Western district, with headquarters at Savannah, Ga. **H. A. Benton** has been appointed superintendent of the Georgia division, with headquarters at Atlanta, Ga., succeeding Mr. Carlton.

W. D. Diddle has been appointed inspector of transportation of the South Carolina division of the Seaboard Air Line, with headquarters at Jacksonville, Fla. **W. L. Powers** has been appointed inspector of transportation of the Florida division, with headquarters at West Palm Beach, Fla. **J. L. Smith** has been appointed inspector of transportation of the Florida division, with headquarters at Tampa, Fla.

W. A. Kraemer has been appointed assistant superintendent of the Wisconsin division of the Chicago & North Western, with headquarters at Chicago, Ill., succeeding A. R. Pelnar. **H. A. Parish** has been appointed trainmaster of the Wisconsin division, with headquarters at Chicago, Ill., succeeding Mr. Kraemer. **H. R. Koch** has been appointed trainmaster of the Iowa division, with headquarters at Council Bluffs, Ia., succeeding Mr. Parish, and **L. B. Kendall** has been appointed trainmaster of the Iowa division, with headquarters at Boone, Ia., succeeding Mr. Koch.

The following have been appointed trainmasters on the Missouri Pacific on the divisions and with the headquarters indicated: **B. C. Murphy**, all districts except Gurdon district, Louisiana division, Monroe, La.; **H. P. Stark**, all districts except Gurdon district, Louisiana division, Monroe, La.; **E. M. Bishop**, Gurdon district, Louisiana division, Eldorado, Ark.; **W. A. Anderson**, Arkansas division, Little Rock, Ark.; **C. A. Fink**, Arkansas division, Little Rock, Ark.; **R. E. Allen**, Eastern division, Jefferson City, Mo.; **G. T. Lewis**, Eastern division, Jefferson City, Mo.; **H. O. Brenner**, Central Kansas division, Osawatomie, Kan.; **W. V. Jones**, Central Kansas division, Osawatomie, Kan.; **R. H. Merriman**, Omaha division, Falls City, Neb.; **J. J. Knapp**, Wichita division, Wichita, Kan.; **C. A. Peterson**, Northern Kansas division, Concordia, Kan.; **R. O. Morris**, Colorado division, Hoisington, Kan.; **J. R.**

Coulter, Little Rock division, McGehee, Ark.; **E. C. Axline**, Illinois division, Illmo, Mo.; **H. C. Wilson**, Memphis division, Wynne, Ark.; **G. B. Scott**, Missouri division, Poplar Bluff, Mo.; **F. A. Roberson**, Joplin division, Nevada, Mo.; **F. L. Hays**, Central division, Van Buren, Ark.; **G. F. Fleming**, Southern Kansas division, Coffeyville, Kan.; **C. A. Forbes**, White River division, Potter, Ark.

F. G. Gurley, who has been promoted to general superintendent of the Wyoming district of the Chicago, Burlington & Quincy, with headquarters at Alliance, Neb., was born on February 20, 1889, at Sedalia, Mo., and entered railway service in July, 1904, as a clerk in the operating department of the Quincy, Omaha & Kansas City. He was employed as a clerk in a superintendent's office on the Chicago, Burlington & Quincy in July, 1906, and subsequently served in a similar capacity in the offices of a trainmaster and a general superintendent. In August, 1911, Mr. Gurley was promoted to train and station inspector on the staff of the general superintendent of the Wyoming district. He was promoted to yardmaster at Sterling, Colo., in April, 1913, and two years later was promoted to trainmaster of the Casper division. In March, 1917, he was transferred to the Alliance division at Alliance, Neb., where he remained until October, 1918, when he was assigned to special work on the staff of the general manager at Chicago. Mr. Gurley was appointed trainmaster of the Lincoln division in June, 1919, and was later transferred to the Omaha division. In September, 1919, he was assigned to the staff of the operating vice-president at Chicago and in November of the following year was promoted to superintendent of the Wymore division. He was transferred to the Alliance division in June, 1921, where he remained until his recent promotion to general superintendent of the Wyoming district.

Mechanical

F. A. Starr has been appointed supervisor of reclamation of the Chesapeake & Ohio, with headquarters at Richmond, Va.

Engineering, Maintenance of Way and Signaling

C. H. R. Howe has been appointed cost engineer, maintenance of way department, of the Chesapeake & Ohio, with headquarters at Richmond, Va.

Purchasing and Stores

C. L. Tiller has been appointed division storekeeper of the Southern, with headquarters at South Richmond, Va., succeeding **W. N. Pollard**, deceased.

Obituary

James Wilson, division engineer on the Chicago, Milwaukee & St. Paul, with headquarters at Seattle, Wash., died in that city on August 17. He had charge of preliminary location and construction of the main line west of the summit of the Cascade mountains, including the terminals at Seattle and Tacoma. After completion of the construction of the main line in 1909, Mr. Wilson had charge of important construction and supervision of surveys and construction of branch lines.

C. H. Claiborne, superintendent of the Southern division of the St. Louis-San Francisco, with headquarters at Memphis, Tenn., died at the Frisco hospital, St. Louis, Mo., on September 12, of stomach trouble. He was born in 1865 and entered the service of the St. Louis-San Francisco in 1885 as a clerk in the operating department. He was later successively promoted to assistant superintendent of the River division, superintendent of the River division, superintendent of the Northern division, and then superintendent of the Southern division, where he remained until his death.

THE RAILWAY MAIL ASSOCIATION, in its twenty-seventh annual convention held at Denver, Colo., during the first week of September, passed a resolution asking that the railway mail service be provided only with all-steel, well-ventilated and electric-lighted cars.